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THE SIGNIFICANCE AND TREATMENT OF SCIATIC PAIN

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AND
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ROCHESTER, MINN.

Sciatica, or more properly sciatic pain, has always been of importance clinically not only because of its prevalence and its resistance to treatment but because it may be a symptom of so many disease entities. The treatment of sciatic pain of uncertain origin has been complicated by the search for a single therapeutic procedure of sufficient potency to produce immediate and complete relief in all cases. Apparently such a procedure has been difficult to find, for of the various types of treatment reported in the literature not one has had universal success. After analyzing the different methods of treatment for sciatica at the Mayo Clinic, it is evident that the different procedures can be combined into two methods, the ambulant and the institutional, with satisfactory results in a fairly high percentage of cases. Cooperation of orthopedists, neurologists and neurosurgeons has made it possible to correlate the results, and we are presenting them as a possible solution to the problem.

The sciatic nerve is the longest nerve in the body, arises from the primary divisions of the fourth and fifth lumbar nerves and the first and second sacral nerves, and is subjected to trauma, strain and distortion. It would seem reasonable, therefore, to expect that many irritative factors contribute to cause pain in this region.

The term sciatica evidently was evolved from the term "ischias," which was used by the ancients in referring to all painful conditions of the thigh and hip, and consequently there is a tendency to include many irrelevant conditions under this nomenclature. Feiling [1] probably expressed the modern attitude in stating that one should think of this term as merely signifying sciatic pain without allowing it to connote any particular pathogenesis. It has been customary to divide all sciatic pains into two groups. In the primary group have been placed all the so-called idiopathic cases, or those in which the pain is apparently due to pathologic processes involving the nerve itself. In the second group have been placed all cases in which discomfort is due to factors affecting the bony and muscular structures primarily, and in which the nerves are involved secondarily.

Sciatic pain for which no causative factor is apparent can be initiated in various ways. There may be a definite history of trauma, either a fall or a strain, and the pains often appear after exposure. Working in the rain, wading in cold streams, working in damp mines, or exposure to cold, may be followed by severe pain limited to the region supplied by the sciatic nerve. Sometimes there is pain low in the lumbar or sacral region, associated with the sciatic pain, which may either persist or disappear, leaving a residual pain in the thigh and leg. In some cases no predisposing factor can be found.

From the reports in the literature, it seems evident that there are very few cases of primary sciatic pain, and, according to Goldthwait,[2] Danforth and Wilson,[3] Grossman and Keschner,[4] Sicard,[5] Putti [6] and others, it would appear that the condition of the majority of patients suffering from sciatic pain can eventually be classified as secondary sciatica.

From a diagnostic standpoint, it is important to determine the underlying causes of sciatic pain. Among the first of these which should be considered are the constitutional or systemic causes, which include conditions such as diabetes, syphilis and gout, and the forms of toxic neuritis which develop secondary to absorption of alcohol, lead or arsenic.

Tumors of the spinal cord have been known to cause unilateral sciatic pain for many years before the development of additional symptoms which would indicate the diagnosis. In cases in which bilateral sciatic pain eventually develops, as well as in those in which the pain is severe enough to necessitate the giving of morphine, the presence of a tumor of the spinal cord or meninges, involving either the lower end of the cord or the cauda equina, should be suspected.

Neurofibromas along the course of the sciatic nerve may give rise to sciatic pain, difficult to classify unless the nerve is carefully palpated throughout its course. Sometimes café au lait discolorations of the skin or fibroma molluscum of the skin may indicate the presence of such tumors.

Metastatic tumors, or pelvic tumors, compressing the lumbosacral plexus and arising from the uterus and adnexa or from the prostate gland, may have as their initial symptom unilateral sciatic pain, and for this reason pelvic or rectal examination is of extreme importance.

Occasionally, in vascular diseases, such as thromboangiitis obliterans or arteriosclerosis, a sciatic syndrome develops and a difference in the surface temperature of the two lower extremities should indicate some vas-

From the Section on Neurologic Surgery, and the Section on Orthopedic Surgery, the Mayo Clinic.

1. Feiling, Anthony: Sciatica: Its Varieties and Treatment, Brit. M. J. 1: 386-390 (March 10) 1928.

2. Goldthwait, quoted by Danforth and Wilson.[3]

3. Danforth, M. S., and Wilson, P. D.: The Anatomy of the Lumbosacral Region in Relation to Sciatic Pain, J. Bone & Joint Surg. 23: 109-155 (Jan.) 1925.

4. Grossman, Morris, and Keschner, Moses: The Sciatic Syndrome, Arch. Neurol. & Psychiat. 21: 398-411 (Feb.) 1929.

5. Sicard, J. A.: Traité de pathologie medicale, Paris 2: 82, 1921.

6. Putti, Vittorio: Sciatica: Its Cause and Treatment, Brit. M. J. 1: 522 (March 19) 1927.

cular inequality. Patients have come under our care who seemed to have a spastic condition affecting the inferior gluteal (sciatic) artery, which caused the sciatic pain and was associated with coldness of the extremity. Following intravenous injection of typhoid vaccine, the temperature of the two legs became equal and the pain disappeared.

Sicard has suggested that idiopathic or primary sciatica is caused by inflammatory reactions about the roots which go to form the sciatic nerve. He employed the terms "neuritis" when referring to the nerve beyond the trunk, "trunkilitis" when referring to the nerve trunk, "plexitis" when referring to the nerve plexus, "funiculitis" when referring to that part of the nerve root between the ganglion and the plexus, and "radiculitis" when referring to that part of the posterior nerve root within the dura. In addition to this terminology, he employed another term, "neurodocitis," which indicates an inflammatory condition of the intervertebral bony canal through which the nerve passes. These suggestions are in keeping with the ideas of Danforth and Wilson, as well as of MacKinnon,[7] and support the contention that the number of conditions which can be classified as primary sciatica is proportionately small.

Moersch[8] divided sciatic pains into true sciatic neuritis, a clinical entity which is a true peripheral neuritis, and symptomatic sciatica (erroneously called sciatica), symptomatic of a pathologic process directly or indirectly affecting the sciatic nerve.

According to Putti's conception, sciatic pains are caused either by a central lesion or by arthritis of the spinal column involving the nerves traversing the foramina or distal to the ganglions. The central variety, according to his studies, can always be distinguished by means of good lateral and stereoscopic roentgenograms. The peripheral variety corresponds to Moersch's peripheral type, or true perineuritis.

Danforth and Wilson have suggested that the majority of sciatic pains of indeterminate origin are caused by disproportion between the size of the intervertebral foramina of the lumbar region and of the fourth and fifth lumbar nerves. They have demonstrated that the fourth and fifth intervertebral foramina are smaller than the others and that the nerves so completely fill the available space that they are rendered susceptible to any friction, inflammation or trauma which intimate contact with the bone might bring about. In addition, Danforth and Wilson emphasized the fact that anatomically the root of the fourth lumbar nerve is susceptible to disturbance at the lower margin of the sacro-iliac joint, in the greater sciatic notch. The root of the fifth lumbar nerve, in addition to being affected within the intervertebral canal, is exposed to disturbances at the lateral margin of the joint between the body of the fifth lumbar vertebra and the sacrum, and also at the lower margin of the sacro-iliac joint.

MacKinnon, who corroborated the anatomic studies of Danforth and Wilson, has gone a step further and has stated: "All of the features of idiopathic or primary sciatica can be accounted for by infectious, lumbosacral arthritis."

The various anomalies and diseases of the lumbosacral vertebrae from time to time have been accused of being the causative factors in the production of sciatic pain. These anomalies may roughly be divided into those of the spinous processes and laminae, those of the articular facets, those of the transverse processes, and those of the vertebral bodies. In our experience anomalies of the spinous processes and laminae, the so-called spina bifida or spina bifida occulta, are rarely the cause of sciatic pain. Anomalies of the articular facets in themselves are seldom causative factors, yet they may lead to changes which may contribute to the production of sciatic pain in two ways: (1) many cases of spondylolisthesis are accompanied by sciatic pain, and most cases of spondylolisthesis are superimposed on anomalies of the articular facets; (2) arthritic changes in the articular facets, secondary either to trauma or to infections, although hard to demonstrate in the roentgenogram, are no doubt present in many cases of pain low in the back, as can be demonstrated easily in an examination of skeletons. It should be pointed out, too, that the margins of these facets border on the intervertebral foramina, so that irritation of the nerve root, or even encroachment on the nerve space, may be produced.

The most common anomaly of the transverse process is sacralization of the fifth lumbar vertebra. In many of these cases there is complete bony fusion between the transverse process and the sacrum. A more stable joint may result, but it is difficult to understand how irritation of the sciatic roots would follow. In some instances the fusion is not solid but apparently consists in a synchondrosis which may produce changes such as to irritate the sciatic nerve, but this must be regarded as rare.

Anomalies of the vertebral bodies are seen in the more severe types of congenital defect and may or may not accompany myelodysplasia; neurologic changes may be demonstrated, but they are more extensive than in the usual type of sciatica. Hence, anomalies cannot be regarded as the cause of sciatic pain except in rare instances.

Lumbosacral strain or arthritis is the second possible causative factor. In these cases, changes in the articular facets or in the lumbosacral intervertebral disks may be responsible. We have already indicated the changes that may take place in the articular facets and have considered their probable importance in this connection. Changes in the disk are more often in the nature of thinning, possibly with secondary fibrosis of the cartilage, and disappearance of the nucleus pulposus. This leads to narrowing of the space between the fifth lumbar vertebra and the sacrum, and consequent diminution in the size of the intervertebral foramen, which must in many cases cause irritation of the roots of the sciatic nerve. The importance of this has lately been shown by Williams.[9]

Finally, the sacro-iliac joints are often pointed out as the causative factor in sciatic pain. It is a little more difficult satisfactorily to explain sciatic pain accompanying sacro-iliac disturbances than it is to explain the same pain on the basis of a lumbosacral condition. That sciatic pain does occur in connection with sacro-iliac pain is doubtless true. Often sciatic pain has been known to disappear following successful fusion of the sacro-iliac joint. Smith-Petersen[9a] has explained this on the basis of a reflex mechanism. Others have stated that the nerve runs close enough to the joint to be irritated by any factor in the joint itself. This is very doubtful, for the nerve is not close enough to the sacro-iliac joint to be affected directly by irritation of the latter. The fact that sciatic pain does occur in sacro-iliac conditions

7. MacKinnon, A. P.: Sciatica, Canad. M. A. J. **22**: 492-498 (April) 1930.
8. Moersch, F. P.: Sciatic Pains and Their Differentiation, Mil. Surgeon **60**: 562-572 (May) 1927.
9. Williams, P. C.: Reduced Lumbosacral Joint Space: Its Relation to Sciatic Irritation, J. A. M. A. **99**: 1677-1681 (Nov. 12) 1932.
9a. Smith-Petersen: Personal communication to the authors.

must be accepted, however, although it cannot as yet be explained satisfactorily.

Sciatic pain secondary to tumors of the lumbar portion of the spinal column and of the sacrum, as well as of the ilium, is not uncommon. The tumors may be either benign or malignant; some of the most intractable types of sciatica are caused by metastatic malignant tumors.

Information revealed by examination of the cerebrospinal fluid is sometimes very important in the diagnosis. Changes in pressure of the cerebrospinal fluid, following compression of the jugular veins, may determine the presence or absence of a tumor or another factor causing compression. The cellular content of the cerebrospinal fluid may indicate the presence or absence of inflammation about the filaments of the cauda equina (such inflammation causes the high sciatica of Sicard), and the mere change of intraspinal pressure may produce palliation. In addition to cases reported by others, we have seen several cases in which complete relief of pain has occurred following lumbar puncture. Although it is not feasible to recommend spinal puncture in all cases of symptomatic sciatica, yet a thorough investigation may demand it, and it has a therapeutic effect in some cases. Sciatic pain seldom occurs among children; the youngest patient in our series was 21 years of age and the oldest 70; the percentage of men was 72 and of women, 28.

METHODS OF TREATMENT THAT HAVE BEEN SUGGESTED

Injections into the sciatic nerve have been regarded as a specific remedy for the relief of sciatic pain, and some authors have reported as high as 100 per cent of cures. Hertzler [10] reported a series of cases in which he injected 1 ounce (30 cc.) of 1 per cent solution of quinine and urea hydrochloride into the nerve at the point where it crosses the neck of the femur, without failures or recurrences, and with only one unfavorable result. Feiling recommended that in cases in which there is no response to the more conservative methods of treatment, physiologic solution of sodium chloride should be injected into the nerve. He used about 100 cc. of fluid and quoted Harris in recommending two points of injection: one just above the sacro-iliac notch, and the other at the level of the tuberosity of the ischium. Feiling also stated that the injection of oxygen along the nerve trunk was a curative measure.

Sicard [11] has always favored epidural injection of solutions in cases of his so-called high sciatica and has reported favorably on this type of treatment. Since he began this method, others have reported relief in percentages of cases varying from 40 to 70. Evans,[12] in 1930, reported relief or cures in 60 per cent and Ott,[13] in 1922, in 66 per cent. Various solutions have been used. Sicard used procaine hydrochloride in physiologic solution of sodium chloride and Feiling a 40 per cent solution of antipyrine.

Labat and Greene [14] have advocated paravertebral injections of the affected nerves with a solution of alcohol and neocaine (procaine hydrobromide). They distinguished the nerves causing the painful stimulus by means of an electric percussion hammer.

Injection of the sciatic nerve with saline solution, alcohol and other substances may bring about immediate relief of pain in certain cases, but blind injection of any nerve entails the danger of producing a hematoma which may be followed by motor and sensory changes. We agree with Stookey [15] that in dealing with such an uncertain clinical quantity as sciatic pain it is much better to obtain relief in a more conservative manner than to risk the production of paralysis and anesthesia.

Sicard also has reported beneficial results from roentgenotherapy; Ford [16] reported several cases in which there was apparent relief following this form of treatment. Taylor [17] has described a rather radical but apparently successful surgical procedure for the more chronic types of peripheral neuritis which prove resistant to other forms of treatment. He exposed the sciatic nerve as high as the gluteal fold and dissected it free from adhesions to the surrounding structures, being careful not to stretch or otherwise injure the nerve.

Intravenous injection of foreign protein was suggested and tried in 1918 by Hölzl [18] who instituted treatment in twenty-five cases of sciatica and obtained relief in sixteen. Previously, in 1914, Döllken [18] had used foreign protein in the treatment of neuritis and had noted that the "pressure neuralgias" and the "rheumatic palsies" responded best. Injections of proteins comprised part of the usual treatment of patients with arthritis, and their use in the treatment of sciatic pain caused by arthritic changes about the intervertebral foramina, lumbar vertebrae or sacro-iliac joint would seem logical in attacking the irritative inflammatory reaction about the nerve trunk.

Henderson [19] and Phelps [20] have employed manipulation under anesthesia, followed by immobilization, with success in the more stubborn cases. Ghormley [21] has reported immediate relief of symptoms following enlargement of the fifth intervertebral foramen by resection of a portion of the articular facets. Putti advised that immobilization in plaster-of-paris casts, followed by the induction of hyperemia, should be used in cases of sciatica; after nine to twelve months of treatment, if the pain is not relieved, the posterior walls of the intervertebral foramina are removed.

Boncina[22] treated the primary types of sciatica with counter-irritant ointments and reported excellent results in a group of cases. Lewin [23] evidently supported the hypothesis of an inflammatory cause, in view of the fact that he treated patients having sciatica by absolute rest in bed, strapping the back, traction on the leg, heat, and use of a sacro-iliac belt after two to four weeks.

The pain may be constant or paroxysmal and is often exaggerated by exercise or becomes worse after the patient has been sitting for a period of time. It is strange that the pain which occurs when the patient is in the sitting position is often relieved when the patient moves about. The pain caused by tumors of the spinal cord may be relieved by exercise, but it usually occurs during the night, necessitating arising from

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20. Phelps, Winfield: Personal communication to the authors.
21. Ghormley, R. K.: The Operative Treatment of Painful Conditions of the Lower Part of the Back, Proc. Staff Meet., Mayo Clin. **6**: 112-113 (Feb. 25) 1931.
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bed and sometimes sitting in a chair the remainder of the night. Sciatic pain may be constant and last for weeks, months, and even years. Recovery may be spontaneous, and the patient may be free from pain for an indefinite period.

This type of sciatic pain is often referred to as "sciatic scoliosis" because of the frequency with which it is accompanied by scoliosis. Sciatic scoliosis is in most cases caused by the violent protective muscle spasm which is set up to pull the spinal column toward, or usually away from, the affected side. It may remain for months, or it may clear up in a few days with or without the disappearance of the sciatic pain. The primary condition may have occurred in the sciatic nerve, faulty posture resulting from attempts to protect the nerve and avoid stretching it. Stookey stated as his belief that the scoliosis may be symptomatic, and assumed in order to relieve the pain of true sciatic neuritis. The primary postural difficulties, however, may give rise secondarily to sciatic pain, with the primary cause in the sacro-iliac joint or the lumbosacral joint. Eventually the postural difficulty may produce painful signs of its own, even though originally secondary. Likewise, primary postural difficulties may in time produce pain in the distribution of the sciatic nerve.

METHODS OF TREATMENT EMPLOYED AT THE MAYO CLINIC FOR AMBULANT PATIENTS

For the purpose of study we have taken consecutive cases of sciatic pain in which no obvious pathologic condition could be found, and, instead of attempting to divide them into clinical groups, we have studied the results of treatment. Many remedies have been tried, following which the pain has been relieved, but it has been our experience that there is no one remedy suitable for all cases regardless of the symptoms. The economic aspect of sciatic pain presents a special problem, for the patients are usually not completely incapacitated and yet are not able to work on account of the pain. This fact immediately creates the possibility of ambulatory treatment as well as institutional treatment. Grossman and Keschner advised immediate hospitalization in all cases of sciatic pain, and placed great emphasis on rest and immobilization. Frequently it is economically impossible for the patient to remain in the hospital for any length of time. This, of course, brings up the question of suitable treatment to meet the economic status of the patient, and we have reviewed this series of cases with the idea of analyzing the possibilities of ambulatory treatment, and of shortening the patient's stay in the hospital. We have sought for the most efficient single method or combination of methods of treatment which would result in a maximal amount of relief. There is no doubt that rest in bed will bring relief in many cases of sciatic pain caused by irritation.

In many of our cases, orthopedic measures have been combined with epidural injection. In cases in which hospitalization has seemed wise, the rest in bed should be regarded as one of the most valuable phases of the treatment, if not the most valuable. The usual procedure is to have a large panel of boards placed over the springs and under the mattress in order to remove the sagging effect of the springs. It is also advisable not to use inner coil spring mattresses, but to use one or two hair mattresses. A hard bed should not be insisted on even if the patient states that it is comfortable. If it does not seem to relieve the symptoms the type of mattress should be changed or the boards removed, for relief of pain is desired above all else. Buck's extension is applied to both legs, and weight of from 8 to 10 pounds is used. This often relieves the pain, but in many cases the weight cannot be tolerated constantly and must be used intermittently. Often the pain is exaggerated for the first day or two, and it may take a good deal of tact to persuade the patient that he is not being made worse. However, often by the end of the third or fourth day, patients feel somewhat improved and are content to stay in bed for from ten days to two or three weeks, which is the usual time of hospitalization. In addition, a lumbar sling to support, or in many cases restore, the normal lordosis will be found of help. Often it cannot be tolerated more than a few hours at a time, until spasm of the muscle has subsided.

Besides these forms of fixation and traction, daily physical therapy, consisting of diathermy or baking and massage, is given. A few patients will complain that diathermy makes the pain worse. In some instances in which baking seems of value we have kept the patient under a baker for two or three hours, or even longer, each day. Judgment must be exercised in selecting the type of physical therapy, such judgment to be guided by the patient's reaction to the treatment. In many cases of long-standing sciatic pain, when marked muscular atrophy has taken place and the sciatic pain has subsided, it is valuable to institute graduated exercises of the muscles affected in order to restore muscular tonus.

The ambulatory types of treatment are modified only as to the method of fixation. Some form of support for the lower portion of the back and pelvis should be prescribed in most cases after hospital treatment, and it helps many patients who receive only ambulatory treatment. For men, a canvas belt, fitted carefully around the pelvis and extending above the crests of the ilia, laced or buckled both in front and behind in order to be more readily adjustable, is of value. In many cases a pad of leather and felt fitted over the sacrum (Cook shingle) gives better support. For women, such a belt may be used or, what appeals to most women, a well fitted cloth corset. The support must be accurately fitted. In most instances a corset laced in the back can be adjusted better than other types, is more adaptable, and serves the purpose better. In other instances a corset laced in front, with or without a sacral pad, is more suitable. In cases in which there is lumbar ache, the corset must extend high enough to give the effect of splints to the lumbar portion of the spinal column.

Epidural Injection.—The benefit of epidural injection has never been explained satisfactorily, except that this procedure may separate adhesions about the nerve roots and relieve the inflammatory reaction by soothing and irrigating the tissues. Single or multiple epidural injections have been accredited with relieving a great number of patients suffering from sciatic pain, and our experience substantiates this to a certain extent. Epidural injection (caudal block, extradural or epidural block) was used by Cathelin [24] and Sicard as early as 1901 and since that time has become accepted as one of the standard therapeutic measures for sciatica from undetermined causes. Unfortunately, this procedure does not give relief in all cases and therefore should be considered as only one form of treatment. It consists of the injection of certain solutions into the sacral canal, through the sacral hiatus, thus depositing the fluid within the epidural space.

24. Cathelin, M. F.: Une nouvelle voie d'injection rachidienne, Compt. rend. Soc. de biol. **53**: 452-453 (April 27) 1901.

Various solutions have been recommended for relief of sciatic pain. Physiologic solution of sodium chloride is commonly used, but weak solutions of certain analgesic drugs seem to give the best results. Feiling recommended a 40 per cent solution of antipyrine. Because it is likely that most of the resulting benefit is due to stretching of the nerve roots, Brain and Strauss,[25] advised injection of 20 cc. of a 1 per cent solution of procaine hydrochloride followed by from 60 to 80 cc. of sterile physiologic solution of sodium chloride. Our most satisfactory results have followed injection of from 40 to 60 cc. of a 1 per cent solution of procaine hydrochloride, and in stubborn cases a 2 per cent solution has been used. Often injections produce exacerbation of the pain during injection, but the procedure is followed by early and permanent relief. When but partial relief follows one injection, a second, third or fourth may be made, with an interval of one day between injections.

Reactions to the injection differ. Sometimes a "procaine reaction" may be observed during which there is a subjective impression of fainting and vertigo. Should this be severe, the injection should be stopped. Serious reactions have never been reported.

Because of the immediate and striking relief that occurs in some cases of sciatic pain, epidural injection has been accorded a most enviable place in the therapeutic field. However, because of our failure to predicate from a diagnostic standpoint the cases in which a maximal amount of benefit would be derived from the measure, we have used it not only for its therapeutic value but also as a diagnostic measure, and for a time we subjected to it all patients with sciatic pain as a routine.

Complete and permanent relief was obtained in 52 per cent of a group of eighty ambulatory patients treated by epidural injection. The patients were kept in bed for twenty-four hours following the injection. Another 24 per cent of the patients were partially relieved, but further treatment was required before relief became permanent. Twenty-two per cent were not relieved. In the group in which complete relief was obtained, the symptoms had been present for from three weeks to eighteen years. The ages of the patients varied from 22 to 59 years; 80 per cent were men and 20 per cent were women.

It was noted that 34.5 per cent of the patients who were relieved by epidural injection had pain low in the back associated with sciatic pain; the pain of 61 per cent was confined to the thigh and leg, and only 5.5 per cent complained of pain limited to the leg. The left leg was affected in 57 per cent of the cases, and the right leg in 43 per cent; the reason for this difference was not apparent.

Whenever the general examination revealed evidences of foci of infection, these were treated concomitantly, because, in a number of cases in which infection had not been eliminated, relief of the pain by epidural injection was followed by recurrence in a few months. In these cases, however, permanent relief followed elimination of foci and a second epidural injection.

From the diagnostic standpoint, it was noted that in 28 per cent of the cases in which there was response to epidural injection there was definite roentgenographic evidence of hypertrophic arthritis involving the lower lumbar and sacral vertebrae and the sacro-iliac joints. There was roentgenologic evidence of spina bifida occulta in 4 per cent of the cases, involving the first and second sacral vertebrae.

In view of the fact that epidural injection has been advocated for patients without abnormal reflexes and has been of questionable value when these changes were present, it was interesting to note that there was areflexia in 34.7 per cent of these cases, and the achilles, hamstring, and patellar reflexes were most often involved. In addition, there was one case in which the pain was so extreme that the thigh could not be extended; after the first injection the condition was greatly improved, and following the third injection it was completely relieved.

When epidural injections are followed by partial relief, they should be repeated, an interval of one day being allowed between injections. In our group it was found that a maximal amount of relief occurred in 50 per cent of cases after one injection; in 16 per cent, relief was obtained after two injections, and in 8 per cent it was necessary to inject three times or more.

In reviewing this group, it becomes evident that epidural injection deserves consideration in the ambulatory treatment for indeterminate sciatic pain of patients to whom hospitalization would be an economic hardship or impossibility, or of older patients to whom confinement in bed would be a distinct danger.

Diathermy.—In view of the fact that the condition of only 52 per cent of the ambulatory patients was completely relieved by epidural injection, we were interested in comparing the results with those from other methods of treatment. A series of thirty-six consecutive cases in which the patients received daily treatment by diathermy was reviewed. In this group it was found that twelve (33 per cent) of the patients were entirely relieved of pain. The duration of symptoms covered periods of from sixteen years to one month. In this group there were twenty women and sixteen men; the oldest was 78 years of age, and the youngest 24. Four of the patients who were relieved presented roentgenologic evidence of hypertrophic arthritis of the lumbar vertebrae or sacro-iliac joints, and one gave evidence of sacralization of the fifth lumbar vertebra. One patient gave a history of trauma, consisting of a fall on ice, which initiated the pain. One patient who previously had lost the achilles reflex was completely relieved. Three of the patients had infected tonsils which were removed during the treatment, and a periapical focus was removed from one patient.

Epidural Injection and Diathermy.—These methods were combined in the treatment of twenty-four cases without hospitalizing the patients for a longer time than was necessary for the treatments. There were three cases in which the patellar reflexes were diminished to —2, and the achilles reflexes were diminished to the same degree. In this group, nine (42 per cent) obtained complete relief. Thirteen of the patients were men and eight were women. The oldest was 42 years of age, and the youngest 23. The longest duration of pain was five years, and the shortest was two months. Roentgenologic evidence of hypertrophic arthritis was observed in one case, and in three cases there was a history of trauma, consisting respectively of a fall from a truck, a fall from a railroad car, and a fall on the floor striking the back.

Sacro-Iliac Belt and Diathermy.—We investigated the results of support by means of the sacro-iliac belt and daily treatments with diathermy. In this group there were fifty-two patients. In four cases the achil-

25. Brain, W. R., and Strauss, E. B.: Recent Advances in Neurology, Philadelphia, P. Blakiston's Son & Co., 1929.

les and patellar reflexes were abolished. Seventeen patients (32.6 per cent), nine men and eight women, obtained complete relief, and seven others were moderately relieved. The oldest patient relieved was 74 years of age and the youngest 23. The longest history of symptoms was nine years, and the shortest was two months. In four cases there was roentgenologic evidence of hypertrophic arthritis of the lumbar vertebrae or sacro-iliac joints. In three cases, foci of infection were found and eliminated.

Epidural Injection, Sacro-Iliac Belt and Diathermy.—Realizing that each of the ambulant forms of treatment was followed by complete relief in some but not in all cases of sciatic pain, we investigated the results from a combination of the three methods. Fourteen patients were thus treated. The achilles reflexes were abolished in two cases. Twelve patients (85 per cent) were completely relieved. In the cases in which treatment was successful, it was found that the longest duration of symptoms was six years, and the shortest three weeks. The oldest patient was 44 years of age, the youngest 26. In only one case was there roentgenologic evidence of arthritis, and in only one was there sufficient evidence of infection of the tonsils to warrant their removal. In two other cases there was associated scoliosis which was relieved by treatment.

METHODS OF TREATMENT EMPLOYED AT THE MAYO CLINIC FOR PATIENTS CONFINED TO BED

Rest in Bed, Epidural Injection, Diathermy, Buck's Extension, Intravenous Injections of Foreign Protein, and Elimination of Foci of Infection.—Realizing that the ambulatory treatment, although advantageous to aged patients and to others, for economic reasons, produced rather uncertain results, we adopted a combined hospital treatment for patients who wanted intensive treatment and more certain relief. This consisted of rest in bed for a period of from ten days to three weeks, with Buck's extension; epidural injection; daily treatment by diathermy, and repeated injections of foreign protein in the form of typhoid vaccine. In addition, foci of infection were eliminated by tonsillectomy or alveolotomy, and prostatitis was treated until the subject was relieved. This series included twenty-eight cases. In five cases the achilles or patellar reflexes were abolished, and in five others there was roentgenologic evidence of associated arthritis, involving the lumbar vertebrae or sacro-iliac joints. All patients obtained some relief. Only twenty-four (85.7 per cent) could be considered completely relieved, and the other four were moderately relieved. One of the patients who had been suffering from intermittent attacks of sciatic pain for a period of five years was examined two years after undergoing treatment; he had had no recurrence. In this group the oldest patient was 65 years of age and the youngest was 26. Of the seventeen patients who were completely relieved, there were nine who had pain in the back in addition to the sciatic pain. Eight of them gave a history of trauma, consisting variously of a wrenched back, injury in the wrecking of an automobile, lifting heavy objects, and straining while playing golf or tennis. There were seven cases in which severe scoliosis was also relieved. In six of these cases, foci that necessitated treatment were found.

Rest in Bed, Diathermy, Buck's Extension, Intravenous Injection of Foreign Protein and Elimination of Foci of Infection.—For comparison, another series of patients was observed, in which epidural injection had not been included in the combined form of treatment. There were thirty cases in this group. In six, patellar and achilles reflexes were abolished. In nineteen cases (63 per cent) pain was completely relieved. In seven other cases there was moderate relief. The oldest patient was 59 years of age, and the youngest 24. The longest duration of symptoms was five years, and the shortest six weeks. This was an interesting group, for there were ten cases in which associated pain in the back was present, and this was relieved. Four patients had foci of infection which were treated simultaneously with the sciatic pain. Associated scoliosis was present in five cases and was relieved. In five cases there was roentgenologic evidence of hypertrophic arthritis.

Other Forms of Treatment.—The more radical forms of treatment of sciatic pain definitely associated with low backache are beyond the scope of this paper. It is to be pointed out, however, that some patients who do not respond to the outlined forms of treatment may respond to manipulations under anesthesia, followed by the use of a plaster spica cast. These patients, however, must be carefully selected, and usually should be those with severe sciatic scoliosis and marked muscle spasm which it is desirable to relieve by anesthesia. Finally, there is a small group of cases, to be selected with the utmost care, in which treatment should be surgical, with the object of causing fusion of the lumbosacral or sacro-iliac joint, or both.

SUMMARY AND CONCLUSIONS

Sciatica or sciatic pain may be a symptom of constitutional or systemic disease, of tumor or inflammation of the spinal cord or nerve, of derangement or inflammatory reaction about the lumbar vertebrae, intervertebral foramina, or sacro-iliac joint, or the result of postural strain.

In the treatment of so painful a lesion, the contributory etiologic factors must be considered and eliminated if possible.

There is a large group of cases in which the sciatic pain is of uncertain pathogenesis, and efforts have been made to distinguish between sciatic neuritis and sciatic neuralgia. This may be possible clinically, but we were unable to find specific treatment separately applicable to the two conditions.

For the purpose of expediency, we divided the methods of treatment of sciatica into ambulatory and institutional. Many patients are unable, for economic and other reasons, to go to a hospital, and although the institutional form of treatment is the more efficacious, a certain proportion of the patients can be treated successfully by ambulant methods. Institutional treatment can be used alone or for the purpose of supplementing ambulant treatment.

Results of the ambulant forms of treatment are as follows: Epidural injection was done in eighty cases; in 52 per cent relief was complete; in 24 per cent it was moderate, and in 22 per cent there was no relief. Diathermy was instituted in thirty-six cases; 33 per cent of the patients were completely relieved; 12 per cent were moderately relieved, and in 55 per cent there was no relief. Epidural injection and diathermy were applied in twenty-one cases; in 42 per cent of cases there was complete relief; there was moderate relief in 10 per cent and no relief in 48 per cent. A sacro-iliac belt and diathermy were employed in fifty-two cases; relief was complete in 32.6 per cent, moderate in 13 per cent, and in 54.4 per cent there was no relief.

Epidural injection, a belt and diathermy were employed in eight cases; 85 per cent of the patients were completely relieved; 2 per cent were moderately relieved, and 13 per cent were not relieved.

Results of treatment of patients confined to bed were as follows: In twenty-eight cases the following measures were employed: double Buck's extension, diathermy, epidural injections, intravenous injections of foreign protein, and elimination of foci of infection. Of the patients, 85.7 per cent were completely relieved and 14.3 per cent moderately relieved. In fourteen cases, the same measures were employed except that epidural injection was omitted. Complete relief resulted in 63 per cent, moderate relief in 23 per cent and no relief in 14 per cent.

GONOCOCCEMIA WITH RECOVERY

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A case of gonorrheal sepsis with recovery is apparently so rare as to be worthy of reporting. A careful study of the literature reveals not many more than a dozen proved cases on record in which recovery has taken place. Reports of such cases have been made by Thayer,[1] Silvestrini, Dieulafoy, Marfan and Debré, Tapie and Riser, O'Brien and Bancker,[2] Jenkins,[3] Cabot,[4] Garlock,[5] Wheeler and Cornell,[6] and Rubenstone and Israel.[7] The case I am about to report is the seventh case on record in which recovery has taken place without a resultant cardiac lesion. I feel, however, that the small number of cases of recovery from gonorrheal sepsis on record is a false index to the actual number of recoveries from gonococcemia that occur. The difficulty in obtaining cultures of the gonococci and the failure to suspect the possibility of gonorrheal sepsis in cases of gonorrheal arthritis not serious enough to warrant a blood culture probably account for the infrequent detection of recoveries in gonococcemia. With so few cases on record, any statistical statement as to the prognosis in gonorrheal sepsis is almost impossible. The nearest approach to the truth was probably reached by Thomas[8] in his statement that patients with mild gonorrheal sepsis may get well, that severer cases rarely end in recovery, and that if the gonococci are mixed with staphylococci a fatal outcome is almost certain.

REPORT OF CASE

L. W., a woman, aged 31, divorced, a manicurist, who entered the hospital, June 20, 1932, was taken ill with generalized muscular pains, abdominal cramps, chills and severe headache three days previous to her admission. The next day there was intense soreness of both feet, the left wrist, and the right elbow. Her menstrual history was uneventful. She had had two children with normal labors and puerperiums. Her health generally had been good with the exception of an attack of pneumonia in 1918. There was a profuse leukorrheal discharge of one day's duration, immediately previous to her admission to the hospital.

The patient was acutely ill but well nourished. She had a maculopapular eruption, diffusely scattered over the body, thighs and arms, which was diagnosed at this time as being a bromide rash, because she had taken large doses of bromo quinine. Moderate injection of the conjunctivae seemed to substantiate this view. Her left elbow and wrist were painful, tender and swollen. Gynecologic examination done in the medical service was negative, except for slight adnexal tenderness and a retroverted uterus. The cervix was covered with a thick discharge, which was positive for gonococci. June 26, fluid appeared in the left elbow joint, and 15 cc. of cloudy sticky yellow fluid was removed. A culture of the fluid was reported positive for gonococci. July 5, a small amount of fluid was detected in the left knee joint. A pustular eruption appeared at this time on both lower extremities and behind the left ear. A dermatologic consultation suggested the diagnosis of pyoderma following a blood stream infection. Blood culture taken at this time on plain beef broth with 1 per cent dextrose was negative. July 8, a heart examination revealed a snapping apical first sound with a soft systolic murmur not transmitted; the pulmonic second sound was not accentuated. There was no enlargement on the right side. The lungs showed dulness and persistent râles at the left base. There were no changes in the vocal or breath sounds. July 14, a blood culture taken by the first medical division on vitamin ascitic broth was reported positive. A blood culture on the same medium, July 20, was reported positive. July 21, a complement fixation test for gonococci was reported negative. Gynecologic consultation on July 25 revealed moderate tenderness and slight induration in both adnexal regions, but the gynecologic pathologic condition was thought to be chronic and to have no relation to the present condition. The spleen appeared enlarged to percussion but was not palpable. The right wrist and right interphalangeal joints became swollen and tender. Cardiac examinations from July 24 to July 28 were reported negative. July 28, examination again showed no pelvic pathologic changes to account for the temperature. August 1, an examination of the heart revealed a soft systolic murmur at the apex and pulmonic areas. The spleen was still percussed large but not palpable. Lesions on the tongue and hard palate visible at this time were suggestive of petechiae. A blood culture, August 13, on vitamin ascitic broth was reported negative.

The patient was now transferred from the medical to the gynecologic ward for the treatment of gonorrheal cervicitis and arthritis. Smears from the cervix and urethra taken in our wards were repeatedly positive for gonococci. Daily Elliott treatments were begun, August 18, and continued up to September 25, when the temperature became normal and consecutive cervical smears were negative.

The Elliott treatment is a method of introducing heat through the vagina by means of a bag containing water at a temperature of from 115 to 120 F., the heat being increased 0.75 degree per minute until a temperature of 130 is reached. This temperature is maintained for the remainder of the hour and constitutes one treatment. Three small transfusions were given, August 18, 22 and 30. Unfortunately, the patient developed a secondary infection in the transfusion wound which somewhat retarded her recovery.

She was left with a chronic arthritis of the right wrist joint, for which gonococcus vaccine was suggested but not given. She was referred to the physical therapy department for further treatment of the arthritis.

From September 16 to September 28, she was given intramuscular injections of increasing doses of milk on alternate days. All other treatment was symptomatic and consisted chiefly of sedatives and large doses of salicylates.

The temperature curve during the month of June ranged from 98 to 102.8; in July, from 98 to 104; in August, from 98 to 103; in September, from 98 to 101.5, and in October her temperature was normal. Repeated urinalyses were essentially

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negative except for the appearance of a moderate trace of albumin and an occasional granular cast. The Wassermann test was negative. The leukocyte count ranged from 9,800 to 13,000, with about 80 per cent polymorphonuclears. Her red blood count stayed around 4,200,000 and 70 per cent hemoglobin. Another complement fixation test of gonococci, October 4, was reported positive. She was discharged, October 5, with the following discharge note: "Right wrist still quite swollen. No other joints involved. Vaginal examination reveals mild bilateral adnexal thickening, but no masses. Smears from the cervix and urethra have been consecutively negative for gonococci." Further follow-up was not possible because the patient was sent to Chicago by the social service.

COMMENT

The clinical history in my case was quite similar to the histories of the cases of recovery previously reported. Almost all the cases on record have occurred in women. The cardiac involvement in those cases in which recovery has taken place without a resultant cardiac lesion seems to have been confined to a transient soft systolic murmur at the apex, which O'Brien and Bancker suggested might be due to an edema of the valves, which occurs during the height of septicemia. Practically all of the cases presented an embolic rash, which varied in character, a few becoming pustular, cultures from which, however, were negative for gonococci. The pelvic pathologic changes in the cases that occurred in women was surprisingly slight, the gonococci seeming to have left their original site relatively unimpaired, only to wander off and do more damage elsewhere. Most of the patients suffered with multiple arthritis, although Cabot's patient had only an arthralgia. In the few cases in which complement fixation reactions were done, the complement fixation reaction was delayed and did not become positive until months after the onset of the disease. The case that came under my observation gave a positive complement fixation reaction without the use of auxiliary vaccine injections. The classification of two types of cases as described by Wheeler and Cornell and by Garlock—those giving persistently positive cultures in which the prognosis is grave and those giving intermitting positive and negative cultures in which the prognosis is more favorable—is a point well taken. Unfortunately, only four cultures were done in the case reported here, so any such classification was impossible.

In this case, specific or intravenous medication was not instituted at any time. Although I am in no position to comment on the rationale of using Pregl's solution of iodine intravenously, as employed by Rubenstone and Israel, or of using gonococcus vaccine injections, nevertheless the value of these therapeutic measures must be appraised with considerable caution in view of this patient's spontaneous recovery. Only with a good number of cases with sufficient controls can any scientific conclusions be drawn as to the value of specific therapy. I am wholly in accord with the principle of treating the focus of infection as expounded by Cornell and Wheeler and by Garlock, but I hesitate to subscribe to their method of surgical intervention. I am of the opinion that continued Elliott treatment, as described by Holden and Gurnee,[9] are most efficacious in eradicating the gonococci from the genital organs. With this therapeutic measure available, I am therefore strongly opposed to the use of any major operative procedures in an effort to cure gonococcemia.

9. Holden, F. C., and Gurnee, W. S.: The Elliott Treatment—A New Method of Applying Heat, Am. J. Obst. & Gynec. **22**: 87 (July) 1931.

CONCLUSIONS

1. Recoveries from gonococcemia are probably far more frequent than is indicated by the record because:

(*a*) Special mediums are essential in obtaining cultures of the gonococci. In the case reported here, vitamin ascitic broth, prepared by cooking the broth at a low temperature over a long period of time so as not to destroy the vitamins and by adding 10 cc. of ascitic fluid to 250 cc. of the broth, was used.

(*b*) The more frequent taking of blood cultures in cases of gonorrheal arthritis would probably reveal more cases of gonococcemia.

2. A proved case of gonococcemia resulted in recovery without a resultant cardiac lesion.

3. I have emphasized the treatment in this case in that

(*a*) There was no specific or intravenous medication employed.

(*b*) The Elliott treatments were most effective in eradicating the gonococci from all latent foci of infection.

(*c*) There was no surgical intervention.

LATE ETHER CONVULSIONS

REPORT OF TWO CASES

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The occurrence of generalized convulsions during deep ether anesthesia, some cases ending in death, has stimulated much active discussion in the British medical literature since 1925. A personal experience with two cases, one of which was fatal, would seem to justify this report, since a careful survey of the American literature during the past decade reveals no similar reports, and more particularly since Blomfield[1] of the Anesthetics Committee of the Medical Research Council and of the Royal Society of Medicine has recently asked for American reports.

THE CONVULSION

The phenomenon in question is quite distinct from the familiar ether tremor or clonus that develops early in anesthesia, and it must not be confused with the jactitations that may occur under ether when there is oxygen limitation. The attack generally begins when the patient is deeply under the anesthetic, with slight twitchings about the eyes or mouth. These are followed by spasmodic contractions of the limbs and most of the muscles of the body, resulting in convulsive epileptiform movements involving the whole body; the movements may become so violent that the continued performance of the operation becomes impossible. If the anesthetic is discontinued, the movements may diminish and recovery may follow. Unfortunately, this is not always so, and death on the operating table has resulted, as in my first case. Alternatively, according to Hadfield,[2] the convulsions may continue after the patient has returned to bed, and with a fatal result.

From the Surgical Services of the Beth Israel Hospital and the Massachusetts General Hospital and the Department of Surgery, Harvard Medical School.

1. Blomfield, Joseph: Convulsions During Anesthesia (communication to the editor), Anesth. & Analg. **11**: 38 (May-June) 1932.

2. Hadfield, C. F.: Discussion on Late Ether Convulsions, Proc. Roy. Soc. Med. **21**: 1699 (Aug.) 1928.

REPORT OF CASES

CASE 1.—*History.*—A Greek boy, aged 5 years, admitted, June 17, 1929, complained of steady pain in the right lower quadrant, of two days' duration; he vomited on the first day of his illness and then complained of nausea. His only past illness had been measles.

Physical Examination.—The tonsils were hypertrophied but not inflamed; there were pea-sized glands at the angle of either jaw; there was marked spasm and tenderness in the right lower quadrant, particularly over McBurney's point; the heart and lungs were not remarkable. White blood cells numbered 18,200; the temperature was 101.6 F., and the blood pressure 110 systolic and 65 diastolic.

Operation.—After an uneventful induction with nitrous oxide and oxygen, anesthesia was carried on with ether (closed cone method). A retrocecal, perforated, gangrenous appendix was found and removed with considerable difficulty. As the peritoneum was being closed, generalized clonic convulsions developed despite deep anesthesia; the ether cone was removed immediately. Five minutes later the anesthetist announced that the patient was pulseless. The patient's face was livid despite the presence of respirations. Seven minutes after the onset of the convulsions, respirations ceased. Epinephrine was injected into the heart, and external massage was attempted. The abdomen was reopened and the heart was massaged through the diaphragm. After thirty minutes of artificial respiration the child was pronounced dead. Six ounces (175 cc.) of ether had been used in sixty minutes. The respirations, pulse, color and relaxation had been good throughout. The respirations had varied between 32 and 48; the pulse between 160 and 180.

A roentgenogram of the chest was taken within fifteen minutes of the death of the child. Dr. George W. Holmes reported as follows: "Supracardiac dulness is increased but its shape is not that usually seen in enlargement of thymus. The fact that the lungs were deflated at the time the plate was taken may account for the appearance."

Autopsy.—There were a few palpable, firm, discrete, pea-sized, inguinal lymph nodes. The axillary and cervical lymph nodes were not enlarged. Throughout both the large and the small intestine there was marked lymphatic hyperplasia; this was more marked in the ileum, where the mucosa was studded with whitish nodules (from 1 to 3 mm.), which gave it a granular appearance. Peyer's patches were not remarkable.

The mesenteric glands were greatly enlarged and firm; the involvement was diffuse. The retroperitoneal glands were moderately enlarged.

The lobes of both lungs were crepitant, but the lower lobe in each side showed some dependent congestion.

There was normal color and consistency in the thymus. It appeared slightly enlarged, measuring: length: right lobe, 6 cm., left lobe, 7.5 cm.; width, 5 cm.; thickness, from 1 to 2 cm.; weight, 25 Gm.

The bronchial glands were slightly enlarged and firm. The heart weighed 100 Gm.; the liver, 635 Gm., and the spleen, 70 Gm. The spleen was dark reddish blue and firm; the corpuscles were prominent, giving a mottled appearance.

The pathologist could find no cause for the convulsions or death. Impurities could not be found in the ether.

CASE 2.—*History.*—A Canadian girl, aged 17 years, admitted, Jan. 14, 1930, complained of lower midabdominal pain and vomiting of six hours' duration. She had had similar attacks one and five months previously. There were no genito-urinary symptoms and there was no previous history of convulsions or epilepsy.

Examination.—Physical examination showed enlarged tonsils and slight tenderness in both lower quadrants with slight spasm on the right; rectal examination showed tenderness in both culdesacs.

The temperature was 100.4 F.; the pulse, 104, and the respiration rate was 25. The white blood cells numbered 18,000. Examination of the urine did not yield any noteworthy observations.

Operation.—A retrocecal appendix, acutely inflamed, with a well walled-off abscess cavity was found, and the appendix was removed. As the peritoneum was being sutured, the patient developed generalized convulsions and cyanosis, despite deep ether anesthesia. When the ether cone was removed, the color soon became normal but the convulsions continued. Twenty cubic centimeters of 50 per cent dextrose was injected intravenously and ten minutes later the convulsions gradually ceased. The abdomen was then closed with drainage.

Anesthesia had consisted of nitrous oxide and oxygen induction followed by ether (closed cone method). Twelve ounces (350 cc.) of ether had been used; the pulse rate varied between 120 and 130, the respirations between 20 and 30.

The patient was discharged, January 24. Her convalescence had been uneventful. The pathologist reported "acute suppurative appendicitis with perforation." The state chemist could find no impurities or toxic agents in the specimen of ether used.

THEORIES

Convulsions during deep ether anesthesia seem never to have occurred until recent times. From the reports in the literature it would seem that, prior to 1925, only Thomas [3] witnessed this phenomenon. Despite numerous reports in the British literature, no satisfactory explanation has been forthcoming. Many of the patients have been suffering from some acute infection, but others have been in perfect health. In this paper I do not propose to detail or criticize the numerous theories advocated in the British literature. For a detailed exposition, the papers of Hadfield,[2] Walton,[4] MacKenzie,[5] Sykes [6] and Wilson [7] should suffice. I shall make brief mention, however, of the more important theories.

1. *Impurities in the Ether.*—The strongest advocates of this theory are Walton [4] and Wilson.[7] The common impurities in ether are acetaldehyde, peroxides, ethyl sulphide, ketones and alcohol. The first three are toxic if present to the extent of 0.5 per cent or more. Wilson believed that death was due to a poison acting on the central nervous system, such poison rendering the nerve cells incapable of utilizing oxygen. He reported four fatal and five nonfatal cases in one year; all were cases of appendical abscess.

2. *Overetherization with Overoxygenation.*—This theory is advocated by Mennell,[8] who reports eight cases.

3. *Excess of Carbon Dioxide in the System.*—Pinson [9] says this causes dyspnea, with exaggerated muscular activity overflowing from the respiratory group to the rest of the body. He records fifteen cases, of which five were fatal; all were in children or young adults with acute infections.

4. *Anoxemia of Brain, Due to Edema and Collapse of Lung Bases.*—This may result in a patient from failure to receive proper preanesthetic medication.[10]

5. *Atropine Overdosage.*—This is mentioned by Hornabrook.[11]

6. *Increased Cerebral Vascularity.*—This is mentioned by Daly.[12]

3. Thomas, L. K.: Discussion on Late Ether Convulsions, Proc. Roy. Soc. Med. **21**: 1705 (Aug.) 1928.
4. Walton, A. C. R.: A Note on Ether Convulsions, Brit. M. J. **2**: 8 (July 7) 1928.
5. MacKenzie, J. R.: Convulsions During Surgical Anesthesia, Brit. M. J. **1**: 440 (March 14) 1931.
6. Sykes, W. S.: Ether Convulsions, Brit. M. J. **1**: 1128 (June 21) 1930.
7. Wilson, S. R.: "Ether" Convulsions, Lancet **1**: 1117 (May 28) 1927.
8. Mennell, Z.: Discussion on Late Ether Convulsions, Proc. Roy. Soc. Med. **21**: 1705 (Aug.) 1928.
9. Pinson, K. B.: Convulsions Occurring During Surgical Anesthesia, Brit. M. J. **1**: 957 (May 28) 1927.
10. Gwathmey, J. T.: Ether Convulsions: Letter to the Editor, Lancet **1**: 1369 (June 25) 1927.
11. Hornabrook, R. W.: Convulsions Occurring During Surgical Anesthesia, Brit. M. J. **2**: 471 (Sept. 10) 1927.
12. Daly, Ashley: Ether Convulsions: A Note as to Treatment, Brit. J. Anaesth. **9**: 67 (Jan.) 1932.

7. *Acute Toxemia.*—MacKenzie [5] feels that this is the essential and predisposing condition and that ether is the exciting agent.

8. *Histamine Bodies Liberated by the Trauma of Operation.*—Clarke [13] states that this increases the vascularity of the cerebral cortex, particularly of the rolandic area, an effect that is increased by ether. This causes convulsions.

9. *Hadfield's [2] Conclusions.*—(*a*) Some persons possess an unexplained tendency to develop convulsions under ether anesthesia. (*b*) One or more accessory factors may be necessary. (*c*) Among such factors may be heat, sepsis or other toxemia, impurities in the ether, and youth.

10. *Overetherization.*—Thomas [3] observed five cases prior to 1925.

COMMENT

The therapeutic use of dextrose in our second case was due to a suggestion by Dr. E. P. Richardson, former chief of the West Surgical Service of the Massachusetts General Hospital, who expressed the opinion that convulsions, such as occurred in case 1, might have resulted from a hypoglycemia due to a depleted glycogen reserve. This concept was suggested by the work of MacLean and Sullivan,[14] who, when studying so-called status lymphaticus from the blood sugar angle, observed low blood sugar levels within a half an hour of death in three patients in convulsions; the diagnosis of status lymphaticus was made at autopsy. Shortly after my first experience, Griffith [15] reported a series of cases of convulsions associated with hypoglycemia, occurring in children.

It is not my purpose in this paper to propose that late ether convulsions are due to hypoglycemia; I have no evidence for such an hypothesis. This is merely a clinical report intended to stimulate discussion and perhaps elicit further case reports from American writers.

SUMMARY

Of two cases of convulsions occurring during late ether anesthesia, one was fatal and the other ceased, coincident with the intravenous injection of 50 per cent dextrose.

319 Longwood Avenue.

13. Clarke, L. T.: Convulsions During Ether Anesthesia, Brit. M. J. **2**: 358 (Aug. 22) 1931.
14. MacLean, A. B., and Sullivan, Ruth C.: Blood Sugar in Status Thymolymphaticus: New Theory as to Cause of Sudden Death, Proc. Soc. Exper. Biol. & Med. **23**: 425 (March) 1926.
15. Griffith, J. P. C.: Hypoglycemia and Convulsions of Early Life, J. A. M. A. **93**: 1526 (Nov. 16) 1929.

Imperturbability.—In the physician or surgeon no quality takes rank with imperturbability, and I propose for a few minutes to direct your attention to this essential bodily virtue. Perhaps I may be able to give those of you in whom it has not developed during the critical scenes of the past month a hint or two of its importance, possibly a suggestion for its attainment. Imperturbability means coolness and presence of mind under all circumstances, calmness amid storm, clearness of judgment in moments of grave peril, immobility, impassiveness, or, to use an old and expressive word, phlegm. It is the quality which is most appreciated by the laity though often misunderstood by them; and the physician who has the misfortune to be without it, who betrays indecision and worry, and who shows that he is flustered and flurried in ordinary emergencies, loses rapidly the confidence of his patients. In full development, as we see it in some of our older colleagues, it has the nature of a divine gift, a blessing to the possessor, a comfort to all who come in contact with him.—Osler, William: Aequanimitas, Philadelphia, P. Blakiston's Son & Co., 1904, p. 3.

CONGENITAL READING DISABILITY—STREPHOSYMBOLIA

REPORT OF FIVE CASES OF PARTIAL WORD BLINDNESS

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If any excuse is needed for presenting this report, the fact that these little patients are often brought to the ophthalmologist for advice is sufficient. However, it is my further purpose to summarize present knowledge of the condition in order that it shall not escape recognition.

In 1877, Kussmaul [1] pointed out that blindness for words is encountered clinically as an isolated condition. Word blindness was the term selected by him for this acquired pathologic disorder of a special faculty. By word blindness is meant a condition in which with normal vision, and therefore seeing the letters and words distinctly, an individual is no longer able to interpret written or printed language. Subsequent investigations and reports on this acquired word blindness have been numerous and have established the lesion in the angular gyrus of the left side of the brain in right-handed individuals.

The second contribution of importance in this study was made by two English ophthalmologists. In 1896, Morgan [2] reported the first case of congenital word blindness to be found in medical literature. A boy, aged 14 years, showed no inferiority to others of his own age except for his inability to learn to read. In the report Dr. Morgan said: "His great difficulty has been—and is now—his inability to learn to read. This inability is so remarkable, and so pronounced, that I have no doubt it is due to some congenital defect. His visual memory for words is defective or absent; which is equivalent to saying that he has what Kussmaul has termed 'word blindness' (caecitas syllabaris et verbalis). He does mathematics rapidly and correctly." Morgan's attention was called to this type of condition by a paper published in 1895 by another English ophthalmologist, Dr. James Hinshelwood,[3] whose two volumes, one on letter, word and mind blindness,[4] the other on congenital word blindness,[5] are classics and have been a liberal source for this review. The type of cases described by the two aforementioned authors together with others showed an almost entire lack of knowledge of printed and written letters. Hinshelwood recognized that such patients could be taught and would develop this faculty if patience and persistence were methodically instituted. Thomas [6] called attention to the fact that such a condition might follow an hereditary bent. Barlow [7] seems to have clearly demonstrated, in a case of aphasia, that the function of a center on one side of the brain may be taken up by the corresponding center or region on the opposite side. The work of

1. Kussmaul: Word Blindness, in Ziemssen's Cyclopaedia of the Practice of Medicine, New York, William Wood & Company **14**: 770, 1881.
2. Morgan, W. P.: A Case of Congenital Word Blindness, Brit. M. J. **2**: 1378, 1896.
3. Hinshelwood, James: Word Blindness and Visual Memory, Lancet **2**: 1564, 1895.
4. Hinshelwood, James: Letter-, Word-, and Mind-Blindness, London, H. K. Lewis & Co., Ltd., 1900.
5. Hinshelwood, James: Congenital Word-Blindness, London, H. K. Lewis & Co., Ltd., 1917.
6. Thomas, C. J.: Some Forms of Congenital Aphasia in Their Education Aspects, Arch. f. Schulhyg., 1905, p. 171.
7. Barlow, T.: On a Case of Double Hemiplegia with Cerebral Symmetrical Lesions, Brit. M. J. **2**: 103, 1877.

Broca [8] and the associations which his name suggests are widely known. As far back as 1836, Marc Dax [9] suggested that in the left cerebral hemisphere there exists a center for the accumulation of speech memories of right-handed individuals.

Just what causes the location of the speech center for right-handed persons in the left cerebrum has not been entirely decided. In 1905, Gould [10] listed nine theories:

1. A natural provision (Sir Charles Bell and others).
2. The left-sided location of the heart (referred to by Wilson).
3. A greater supply of nerve force to the muscles because of an earlier and greater development of the brain upon one side (Professor Gratiolet).
4. Obstruction to the flow of blood in the vena cava by the pulsation of the aorta (Dr. Barclay).
5. Inspiration produces mechanically a superior efficacy of the muscles of the right side (Professor Buchanan).
6. The center of gravity theory. The influence of the weight of the viscera of the two sides of the body upon the position of the center of gravity (Dr. Struthers).
7. The origin of the subclavian arteries, the left before the right in the left-handed, with superiority of blood supply to certain structures (Professor Hyrtl).
8. The development of one cerebral hemisphere more than the other (Wilson).
9. The Topsy theory—"just growed."

Gould's own conclusions are of interest in spite of the fact that no one has attempted to substantiate them:

1. Coordination of sensation, perception, judgment and act are rendered more accurate, expert and quick by this close contiguity and interrelationship than if made by commissural fibers from the other cerebral hemisphere.
2. The original location of the speech center in the dextral was caused by the almost universal employment of the right or spear-hand in sign language preferred to the left or shield-hand, because this was more restricted in movement by holding the shield over the heart.
3. The origin of left-handedness was in large measure due to the location or education of the speech center in the right brain because of the injury to the dextral organs, *but chiefly to disease or deficient vision of the right eye* (italics mine).

Of interest to interpolate at this point is the recent investigation by Dandy,[11] who concludes that:

1. It is possible to remove all of the right cerebral hemisphere above the basal ganglia with no appreciable disturbance of mentality.
2. By the excision of the left occipital lobe and of the lower third of the left temporal lobe we can be sure that none of these regions are responsible for intelligence. The intellect, therefore, is concerned with the remaining portion of the left cerebral hemisphere and is doubtless closely related to the speech mechanism.
3. Ligation of the anterior cerebral artery on the left side causes complete and everlasting loss of consciousness. This, of course, in a right-handed individual. Thus it is suggested that the anatomy of the vascular supply may be the dominating cause.

But what part does the eye have in all this controversy? The first mention of ocular dominance found in the literature was made by Porta [12] in 1593. It was noted that right-handed individuals preferred to use the right eye to the exclusion of the left eye when aiming.

In 1903, two articles appeared independently, drawing attention to ocular dominance. Rosenbach [13] demonstrated that right-handed individuals preferred the right eye, while left-handed ones were more prone to use the left eye. Majewski [14] showed that Hering's conception of a single cyclopic eye with the theory of identical visual directions was contrary to a phenomenon observed by Javal. In his series of cases, Majewski found that 55 per cent were right-eyed, 19 per cent were left-eyed, and in 21 per cent visual direction was between the two eyes but not always exactly half-way. Gould [15] even went so far as to say that "The indicator of all action, the very creator of intellect, is vision. Hence all right-handed people are also right-eyed."

Enslin [16] attempted to substantiate Rosenbach's work by showing not only that do the right-handers prefer the right eye but that the majority of left-handers prefer the left eye.

About this time attention was directed to methods of determining ocular dominance. Durand and Gould [17] brought forth a simple piece of cardboard with a short tube attached in front of the small hole in one side, through which objects viewed at a distance could be seen only with one eye, although the patient was focusing with both eyes. They also stressed the point that improper refraction may cause loss of the naturally dominating eye with serious consequences. Dolman [18] describes a simple piece of paper or cardboard, 13 by 20 cm., with a hole 3 cm. in diameter in its center, which the patient holds at arm's length and sights through. In a conclusion in regard to some psychologic studies, Miles [19] declares: "Ocular dominance is assuming a place of increasing importance in ophthalmology and physiological optics. It is a phenomenon which may be objectively measured and used in studying the general problem of dominance by the right or left cortical hemispheres."

Wray [20] described two tests for ocular dominance. The first method was by means of a ring through which the person examined looked at a distance object. The second method interests the ophthalmologist: While looking at the middle letter of the 6/24 line of the Snellen test type, the patient's index finger of the right hand is pointed at it, then the left eye is closed. If the person is right-handed, the pointing is accurate. Thus Wray interpreted handedness by ocular dominance. Griesbach [21] substantiated Wray's observations as far as left-handed individuals are concerned. Quinan [22] estimated that 4 per cent of our population is left-handed, and that stammering occurs in sinistrals with a frequency from three to seven times greater than in dextrals.

Lloyd Mills [23] is perhaps the ophthalmologist of the United States who has studied eyedness and handedness

8. Broca, P.: Remarques sur le siege de la faculté du langage articale, suivies d'une observation d'aphemie, Bull. Soc. anat. de Paris **6**: 330, 1861.
9. Cited by Travis, L. E.: Speech Pathology, New York, D. Appleton & Co., 1931, p. 28.
10. Gould, G. M.: Biographic Clinics, Dextrality and Sinistrality, London, Rebman, Ltd. **3**: 341, 1905.
11. Dandy, W. E.: Changes in Our Conception of Localization of Certain Functions of the Brain, Am. J. Physiol. **93**: 643 (June) 1930.
12. Porta, Ioan Baptista: De Refractione opticis parte, Neapoli, apud Io. Iacobum Carlinum et Antonium Pacem, 1593.
13. Rosenbach, O.: Ueber Monokulare Vorherrsehaft beim binocularen Sehen, München. med. Wchnschr. **2**: 1290, 1903.
14. Majewski, K. W.: Postep Okulestycny, No. 9, 1903; abstr. Zimmerman, C.: Ophthalmology **1**: 337, 1905.
15. Gould, Biographic Clinics, Dextrality and Sinistrality, p. 351.
16. Enslin: Kurze Mitteilung über ein Augensymptom der Linkshandern, München. med. Wchnschr. **57**: 2242, 1910.
17. Durand, A. C., and Gould, G. M.: A Method of Determining Ocular Dominance, J. A. M. A. **55**: 369 (July 30) 1910.
18. Dolman, Percival: Tests for Determining Sighting Eye, Am. J. Ophth. **2**: 867 (Dec.) 1919.
19. Miles, W. R.: Ocular Dominance Demonstrated by Unconscious Sighting, J. Exper. Psychol. **12**: 113 (April) 1929.
20. Wray, C.: Right-Handedness and Left-Brainedness, Lancet **1**: 683, 1903.
21. Griesbach, H.: Ueber Linkshandigkeit, Deutsche med. Wchnschr. **45**: 1408, 1919.
22. Quinan, Clarence: Sinistrality in Relation to High Blood Pressure and Defects of Speech, Arch. Int. Med. **27**: 255 (Feb.) 1921, quoted in Is Lefthandedness a Sign of Inferiority? editorial, J. A. M. A. **76**: 1010 (April 9) 1921.
23. Mills, Lloyd: Eyedness and Handedness, Am. J. Ophth. **8**: 933 (Dec.) 1925.

to the greatest extent. He emphasizes the idea that bilateral asymmetry of function is limited by no means to the eyes. A conclusion he draws [24] is that "nervous and mental instability apparently is more common among the crossed dextrals and sinistrals than among the pure dextrals and sinistrals. The suggestion is made that the deliberate reeducation of these classes to their natural full left-sided dominance may be an important factor in reestablishing nervous balance."

As early as 1911, Whipple [25] reported a case of left-handedness in a child, which condition, when the use of the right hand was stimulated, caused stammering. He also cited a case described by E. B. McCready in which a little girl ceased to talk when left-handedness was corrected. Thus another factor enters the picture. Beeley's [26] experiments showed conclusively that mirror writing is not correlated with mental deficiency, as held by Judd,[27] Barr [28] and Sherlock,[29] but is a characteristic of extreme left-handedness. This was substantiated in his [30] further work. Lately Smith [31] has reviewed the theories as to the cause of right-handedness and left-handedness. Ballard [32] has given an insight into variations in speech of left-handed individuals. Nice [33] was of the opinion that speech depends on the development of handedness. A review of this type would not be complete without mention of Parson's [34] book on left-handedness. In studying a large group of school children, he reported the following figures: Out of 877, 29.3 per cent were left-eyed; of 608 who were right-eyed, 99.5 per cent were right-handed; of 257 who were left-eyed, only 12.4 per cent were left-handed.

The third and final important contribution to this subject was made by Dr. S. T. Orton. In his preliminary report Orton [35] gave the results of studying a group of children with reading difficulties. In his first series he found two cases that fitted Hinshelwood's criteria of true congenital word blindness, but one exhibited bizarre written productions. He reported fourteen other cases in this series. The majority of the children had a tendency to read from right to left and also had what is known as reversals. The reversals consisted of inability of distinguishing lower case p from g or q, and b from d. Orton emphasizes the importance of the left-handedness and mirror writers by citing previous reports. Gordon [36] found about 20 per cent of the children in a school for defectives left-handed; 8 per cent of the total number, 1,350, were mirror writers. Lucy [37] found many mirror writers even among right-handed individuals in an extensive study. No relation was revealed as to ocular dominance. In his second contribution, Orton [38] brings out the fact that Berkhan [39] decided in 1885 that children with reading defects were mental defectives. He gives credit to Kerr [40] for reporting with Morgan independently but, at the same time, the first case of congenital word blindness. The outstanding features of strephosymbolia according to Orton are (1) difficulty in differentiating p and q, and b and d; (2) a striking tendency to confuse palindromic words such as was and saw, not and ton, and to reverse paired letters or even whole syllables or words in reading, so that they are read from right to left instead of from left to right; (3) a considerable degree of capacity to read from a mirror, and (4) a greater facility in producing mirror writing. He believes that it is easy to refute the assumption that reading disability is due to certain degrees of intellectual defect but that it is difficult to eradicate the condition. However, with patience and perseverance, much may be accomplished. No visual defects of any consequence were found in these patients.

REPORT OF CASES

The following five cases were sent to me for examination because it was thought that the inability of the child to make normal progress in school was due to visual defects. A consideration of the psychiatric phase will not be attempted, but certain behavior phenomena will be cited in order that this aspect of each individual case should be recognized.

CASE 1.—G. G., a Negro boy, aged 8 years, was seen in the neurologic clinic of the Northwestern University Medical School and was directed to my attention through Dr. Harry Paskind. The patient was referred by the school physician for a thorough examination because he was peculiar. He was large for his age, with an oversized head, and he wore thick myopic lenses. Subsequent examination of the eyes revealed myopic fundi with visual acuity of 20/15 for each eye with a correction of -5.0 D. S. $= -1.0 \times 90$. He had been wearing this correction for one year. In reading the Snellen chart, it was noted that there was some hesitation even on the large P, B, D and L. In reading the small type there was great difficulty in recognizing the words was, not and dog. The single lower case letters b, d, g, p, q and y were often misquoted. The boy was left-handed and left-eyed. He was an exceptional artist for his age and excellent in mathematics. When asked to write with his right hand, he showed typical mirror penmanship. A sentence constructed mirror fashion was read quickly. He was returned to the school physician with an explanation of his partial word blindness and has made rapid progress after special attention to his defects. His father likewise was left-handed.

CASE 2.—H. H., a boy, aged 7 years, was seen in private practice, sent because his parents noticed that in reading he held his book very close and more especially on the left side. Neither parents nor either of his four grandparents was left-handed, and two younger brothers were right-handed. The patient used his right hand entirely in writing, eating, playing and every ordinary manipulation in which a hand was necessary, but he was decidedly left-eyed. This was repeatedly demonstrated by various tests. He even sighted a gun with his left eye, although the stock was held against his right shoulder. Visual acuity under a cycloplegic was as follows: O. D. $= 20/15 + 0.5$ D. S. $= 20/15$, O. S. $+ 0.25$ D. S. $= + 0.25 \times 90 = 20/15$. Skiascopy showed $+ 1.0$ D. S. over this, and no glasses were recommended. A slight hesitation was noted in the reading of the Snellen test letters B, D and P. Reversals were frequent in reading, and the lower case letters b, d, p, and q were often entirely missed or slurred over. Attempts to write with the left hand were fraught with the usual clumsiness. However, he was able to mirror write readily with the right hand. His reading of mirror writing was not easy. Further questioning

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revealed that although he was large for his age he preferred the company of his younger brothers and their companions. His parents had never been able to train him in proper nightly habits. Mathematics was his best study. His father stated that he had entirely exhausted his ingenuity in attempts to teach him to read. In one month's time, under special tutoring by a student of child behavior problems who understood his difficulties, a marked improvement was shown. His inferiority complex was entirely lost. There was no more bed wetting. He became a leader among the boys of his age, most of whom were smaller than he.

CASE 3.—G. P., a boy, aged 9 years, was seen in private practice. After he had been in school for from six to nine months, his father, a physician, noted the boy's difficulty in the mastery of reading. Also, the teacher had written home a note asking that he be made to work harder on his studies. The parents realized that the boy was not lazy and that his only handicap was in reading. He was sent to an excellent child behaviorist, who recognized the condition. The ocular examination was a part of a routine examination two years after methods had been instituted to correct his defect. There was no left-handedness in either parent, four grandparents or an older brother. The only time the patient used his left hand in preference to the right was when at bat in baseball. He was definitely left-eyed. Visual acuity was 20/15 with either eye, and only a very minute degree of hyperopia was found. All letters were read with a fair amount of ease, but on particular search it was found that the lower case letters b, d, p and q caused slight difficulty. Mirror writing with the right hand was very facile. There was the usual difficulty in mirror writing with the left hand. This boy has evidently overcome most of his word blindness after excellent tutoring.

CASE 4.—R. C., a boy, aged 10 years, seen at the eye clinic of the Michael Reese Hospital, had been in the second grade for two years and had recently been returned to the first grade because of inability to keep up with the class. It was suggested that his difficulty might be due to impaired vision. The boy was large for his age and exceedingly timid. His visual acuity was 20/51 for either eye and at a postcycloplegic test would accept only + 0.25 D. S., so glasses were not prescribed. The father was left-handed, as also was the boy. He was definitely left-eyed. His ability to read letters was so poor that numbers were used to test visual acuity. He read these rapidly and accurately. After much perseverance it was found that the letters which gave him especial difficulty were B, C, D, G, L, O, P and Q, both in upper and lower case, but more especially in the latter. He was not only good at mirror writing with the left hand but was an excellent mirror reader; in fact, he himself realized immediately that mirror reading was easy for him. He was referred to the clinic on mental hygiene, where, under the guidance of Dr. Erwin Eisler, he has made gradual progress.

CASE 5.—J. W., a girl, aged 6 years, seen in private practice, had been in school two months and was unable to learn the alphabet, although otherwise she was a seemingly bright child. She made grimaces when attempting close work and her parents thought there might be some visual defects. Neither parents nor paternal or maternal grandparents were left-handed. The child had always preferred the right hand. She was definitely left-eyed. Visual acuity with either eye was 20/15. A mild degree of hyperopia was found on refraction under a cycloplegic but not enough to warrant the prescribing of glasses. The child was greatly confused in reading lower case letters, especially b, d, p and q. She could recite the alphabet perfectly from memory. Because of her age, the test for mirror writing was not considered satisfactory. With private tutoring in six months' time this child is graded highest in her class in all subjects.

COMMENT

In all the cases cited it was demonstrated that the center for auditory memory was entirely normal. This factor was used as an adjunct in teaching these little tots. Travis's [41] statement that handedness is the sine qua non of laterality would not seem to be borne out by these cases; neither is it evident that Gould's [42] explanation, that eyedness is determined by defects in one eye which cause the other one to become dominant, would fit in with such a group. From a perusal of this small group of cases, weight is added to Orton's [43] statement: "The master eye has been held by some to be a safer guide to native dominance than the master hand." The fact that early training may reverse the master hand while no amount of training has been able to change the master eye would seem to enhance the importance of determining eyedness. Histopathologic changes in the center for speech has not been studied in this type of case as yet but may in the future reveal an anatomic foundation of the difficulty.

SUMMARY

1. In five cases of acquired, congenital and partial (strephosymbolia) word blindness, ocular dominance has been the outstanding feature.

2. It is important to determine the dominant eye; it is of value to the ophthalmologist and to the patient's future.

3. It is hoped that, by bringing such a condition to the attention of the ophthalmologist, a saner regard will be stimulated for these little ones with partial word blindness, and thus the stigmas of "mental defectives" will be lifted from them.

104 South Michigan Avenue.

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PANCREATIC NECROSIS

REPORT OF CASE WITH SEQUESTRATION OF THE PANCREAS AND RECOVERY

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AND
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The following case of pancreatic necrosis is reported because of the particularly interesting observations and the series of events that occurred during the course of the illness:

REPORT OF CASE

History.—I. C., a white man, aged 36, a dentist, was admitted to the Jewish Hospital of Brooklyn in the private surgical service of Dr. William Linder, April 13, 1932. About twelve hours before admission, the patient began to complain of nausea and retching, with excruciating epigastric pain which radiated first to the front of the chest and then to the right scapular region. The pain became so severe that the patient screamed in agony.

The past history revealed that he had had three mild attacks of general pain in the upper part of the abdomen and vomiting two years previously, but no definite diagnosis had been made at that time.

The family history was irrelevant.

Examination.—The patient was seen by Dr. Linder for the first time at 10:30 p. m. the night before his admission. At this time he appeared fairly well nourished and desperately ill, apparently in severe shock. His respiratory rate was 50 and his pulse 140 per minute. The temperature was 100.8 F., and the blood pressure 100 systolic, 80 diastolic. There was

From the surgical service of Dr. William Linder and from the Department of Pathology, Dr. Max Lederer, director, Jewish Hospital of Brooklyn.

cyanosis of the face and extremities. The heart and lungs were normal. Abdominal examination revealed marked tenderness to palpation and rebound tenderness in the epigastric region, extending across the abdomen toward the left of the ensiform cartilage. There was no localized mass nor spasticity, but the abdomen presented a rather doughy feel to palpation. Because of extreme shock and the presence of pain in the chest, the differential diagnosis between coronary occlusion and acute pancreatitis had to be considered, but it was felt that the condition was due to the latter rather than to coronary occlusion. It was decided that the patient was too sick for any surgical intervention at the time but that, if he survived until morning, a laparotomy would be performed.

The urinalysis, including the Fehling test for sugar, was normal except for the presence of many hyaline casts.

The stool examination showed well formed, yellow feces with no undigested food particles.

A blood study showed: red blood cells, 4,510,000; white blood cells, 18,200 with neutrophilic polymorphonuclear leukocytes, 88 per cent; transitionals, 2 per cent; lymphocytes, 10 per cent, and hemoglobin (Dare), 85 per cent.

Operation and Result.—The patient was seen the following morning and the diagnosis of acute pancreatitis was still maintained. The condition of shock had by this time subsided to such a degree that a laparotomy was deemed safe and advisable. A right upper rectus incision was made and the peritoneal cavity opened. It was found to contain bloody fluid and some blood clots. The peritoneal surface was found to be the seat of a widely scattered fat necrosis and the mesocolon to be the seat of multiple subserous hemorrhages. The pancreas was swollen and of chocolate color.

The sanguineous fluid was immediately aspirated, and wide rubber drains were inserted into the pancreatic region at several points, down to Morrison's pouch, and to the duodenojejunal junction or omental bursa. The operation was performed under spinal anesthesia, the patient reacting satisfactorily.

Soon after the operation the patient received dextrose with sufficiently large doses of insulin to counteract the pancreatic deficiency that had set in. The diabetic state was apparently well controlled, so that the glycosuria diminished from 2 per cent on the second to normal quantities on the eighth postoperative day. There was also a synchronous decline in the blood sugar from 192 to 136 mg. per hundred cubic centimeters of blood.

On the twelfth day after the operation, however, the patient began to show signs of local peritonitis with a recurrence of the glycosuria. The latter was controlled by an increase in the insulin dosage and a fat-poor diet, but the general condition of the patient remained unsatisfactory. The local peritonitis persisted and the patient began to vomit profusely.

All the drains but one were removed by the tenth postoperative day (April 24). This drain was left in place because it was felt that, owing to the extensive damage to the pancreatic tissue, a slough might develop. The condition continued poor during the third and fourth postoperative weeks and it was necessary to give the patient a transfusion of 500 cc. of unmodified whole blood as a supportive measure. The vomiting gradually subsided but there was very little improvement in his general condition. During the fifth postoperative week several moderate hemorrhages occurred through the abdominal wound, thus giving rise to the suspicion that a pancreatic slough was forming. The sinus was probed with uterine dressing forceps and a soft loose mass of tissue was encountered deep down within the abdominal cavity. The sinus was investigated again the following two days, and on the third day, May 20, the slough had become entirely free and was removed by forceps.

The pathologist reported that the specimen was pancreas, measuring 17.5 by 3 by 1 cm. The head, neck, body and tail of the organ could be definitely identified. It was of mottled brown, gray and red and of a cheesy consistency. On section, the cut surfaces showed extensive hemorrhagic necrosis, accompanied by purulent changes in most of the parenchyma. On microscopic examination only remnants of normal pancreatic tissue could be recognized. The major portion of the parenchyma and peripancreatic fat were the seat of necrosis and suppuration. The pathologic diagnosis was pancreatic necrosis with suppuration.

Postoperative Course.—Following the removal of the pancreatic slough, the wound healed rapidly and the patient improved steadily. He was discharged from the hospital with no evidence of diabetes or pancreatitis, June 14, eight weeks after admission. On the day of his discharge from the hospital, the urine and blood sugar values were normal, although the patient had been on a nondiabetic diet without insulin for some time. He was therefore instructed to continue on a similar regimen at home.

About two weeks later he began to feel drowsy and restless and noted that his appetite and desire to drink had increased markedly. A blood sugar determination at that time revealed 350 mg. of sugar per hundred cubic centimeters, and a urinalysis showed 4.7 per cent of sugar. He was immediately placed on a carbohydrate diabetic diet and received 60 units of insulin daily. His condition improved slowly during July and August, so that by the beginning of September he was almost entirely symptom free and was able to control his diabetes by dietary measures alone. He maintained a weight of 131 pounds (59.4 Kg.) during August and September.

The morning of September 27, he began to have severe epigastric pain. He vomited his lunch, following which the pain became worse and spread throughout the midabdominal region. He was readmitted to the hospital that evening and on examination showed marked hyperesthesia of the left lower quadrant (pancreatic zone) with rebound tenderness and marked tenderness to palpation in that region. During the following four days the pain became localized in the right upper quadrant. The impression was that a pancreatic abscess had formed or was in the process of localization. For one week, he received forced fluids with very little food by mouth. The abdominal pain was alleviated by hot applications.

Second Operation.—October 3, one week after admission, a laparotomy was performed. An incision, parallel and just to the left of the previous incision, was made and the peritoneal cavity was opened. After separating adhesions which had formed, the palpating finger felt a retroperitoneal boggy mass, the size of a lemon, located beneath the duodenum. An aspirating needle was inserted into the mass and pure pus was withdrawn. Dressing forceps were next inserted into the mass and about 8 ounces (240 cc.) of thick yellow odorless pus was evacuated. A soft rubber tube was placed into the abscess cavity and the abdomen was closed. The patient reacted well for the first few hours but went into shock that same evening. The condition, however, was almost immediately relieved by the intravenous administration of 500 cc. of 10 per cent dextrose. On inquiry, it was discovered that the patient had received orange juice and insulin shortly before the onset of shock. On examining the dressings of the abdominal wound, it was found that they were saturated with orange juice. This established the fact that a duodenal fistula had formed. Furthermore, the failure to ingest the orange juice, which was meant to cover the insulin dose, resulted in hyperinsulinism, which undoubtedly explained the concurrent shock episode.

An attempt was made to feed the patient through a duodenal tube inserted through the mouth. This was unsuccessful and in order to prevent inanition, a jejunostomy was performed, October 5, and a jejunostomy tube sewed into place. The patient withstood the procedure exceptionally well, became more alert, did not complain of pain, and remained afebrile from the fifth day following the drainage of the abscess. Feedings were given through the tube every two hours, in this way maintaining a satisfactory state of nutrition.

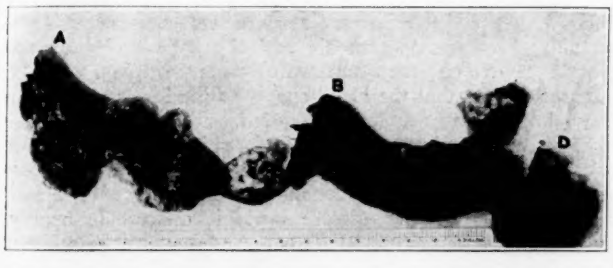
The administration of insulin was instituted immediately after the drainage of the pancreatic abscess. The amount of insulin administered was determined by daily blood and urine sugar analyses. The blood sugar never exceeded 166 mg. per hundred cubic centimeters and the urinary sugar was never greater than 1 per cent. On the fifth day after the operation for the pancreatic abscess, insulin was discontinued. On the eighth postoperative day the urine and blood sugar values were normal. On the seventh postoperative day all the drains were removed from the wound and only a slight serous discharge was noted.

During the third postoperative week the duodenal fistula had completely closed. The jejunostomy tube was removed and the patient was given food by mouth for the first time since the jejunostomy. The jejunostomy opening closed spontaneously on the fourth day after the removal of the tube. The patient was discharged from the hospital four weeks after the second admission.

He was last seen, Jan. 10, 1933, and found to be in good health and gaining in weight on a full diet, accompanied by 15 units of insulin daily.

COMMENT

There are several interesting features that make this case unique. Textbooks on pathology just mention in passing that in pancreatic necrosis the entire organ may slough, but they give no specific reference to cases that could be considered similar to the one here described. A review of the literature on this subject reveals only one report of a case, described by Colp,[1] in which he found the "greater part of the pancreas" sloughed out of its bed, but the author does not state how much of the pancreas was sequestrated. This patient recovered after 110 days of illness. There have been other cases reported in which the entire pancreas sloughed out of its bed; but in none of these did the patient recover, and in most of them the observation was made on postmortem examination. Thus, in Chiari's [2] case, in which portions of the organ were passed by rectum, the main mass was discovered at autopsy. More recently, Grant [3] reported two cases in which, at operation, the entire or major portion of the pancreas was found lying free in the abscess cavity. In neither of these cases, however, did the patient survive.



Appearance of sloughed pancreas: *A*, tail; *B*, body; *C*, neck; and *D*, head.

Another unique feature in this case is the fact that, in spite of the loss of what appeared to be almost the entire pancreas, carbohydrate metabolism was never very seriously disturbed. Whatever derangement occurred was easily corrected by special diet and by only moderate doses of insulin.

It is to be noted, too, that at no time during his illness was there any demonstrable disturbance of pancreatic digestive function. Although the greater part of the pancreas had sloughed, repeated examinations showed well formed, yellow stools with no undigested food particles. Furthermore, despite the grave complications (abscess formation and duodenal fistula necessitating a jejunostomy) which occurred during the diabetic state, the patient made an excellent recovery.

The necessity of an early diagnosis of pancreatitis was pointed out by one of us [4] in 1917 and again [5] in 1929. This point is again illustrated in the present case. In reviewing the past history of our patient, one can say with a fair degree of certainty that the disease process might have been arrested much earlier had the two previous attacks of mild pancreatitis been recognized at the time.

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CONCLUSIONS

An exceptional case of acute necrosis of the pancreas is reported in which almost the entire organ was spontaneously extruded through the drainage wound. Despite the great loss of pancreatic tissue and grave complications that arose (abscess formation and duodenal fistula followed by a jejunostomy), the carbohydrate metabolism and pancreatic digestion showed remarkably little impairment, the patient ultimately making an excellent recovery.

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DISSECTING ANEURYSM OF THE AORTA

REPORT OF CASE DIAGNOSED DURING LIFE

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WITH A PATHOLOGIC STUDY BY
ALFRED HENRY HEALD, M.D.
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Gager,[1] in 1928, collected 402 cases of dissecting aneurysm from the German and the English literature, five of which were diagnosed ante mortem. More recently, Vaughan and Irons [2] have each diagnosed a case ante mortem. Ettling [2] has correctly diagnosed six cases of traumatic dissecting aneurysm before death. The clinical features have been excellently described by Gager,[1] the four primary ones being a sudden onset usually following strain; a severe, continuous pain like that of coronary occlusion, and often with significant distribution in that it progresses with the dissection; anomalies of the circulation such as inequality or absence of arterial pulsation in various regions, and the effects of disturbed circulation in other organs or parts of the body. Four fifths of the instances occur after the age of 40, the incidence being twice as great in men as in women. Sixty-five per cent of the victims die immediately from complete rupture of the aneurysm. Another 15 per cent die suddenly in a few days. The remainder have a good chance of recovery.

The following case presented typical symptoms and signs, which led to the correct diagnosis before death:

REPORT OF CASE

History.—R. W., a man, aged 59, married, of Irish and English parentage, a sheet metal worker, felt perfectly well until shortly after arising on the morning of entry. Suddenly, without exertion, he began to have severe, constant constricting pain in both sides of the lower part of the chest, with radiation straight to the spine but not to the shoulders. The pain rapidly descended into the abdomen, the hips and the left leg. He went to bed, and shortly thereafter his left leg became cold, numb and paralyzed. The right leg was similarly affected to a slight degree. The pain in his chest gradually disappeared, but the pain in the abdomen and in the left thigh and hip persisted.

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1. Gager, L. T.: The Symptoms of Dissecting Aneurysm of the Aorta, Ann. Int. Med. **2:** 658-664 (Jan.) 1929.
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The patient's mother and sister had died following a succession of "strokes" when 65 and 50 years of age, respectively.

The patient had lived in New Zealand until he was 37 years of age; since then he had lived in San Francisco. His habits had been temperate. He had enjoyed good health save for an attack of pleurisy when he was 44. He stated that nothing abnormal was found in an examination for life insurance eight years before. Two years before he had been told that he had a hypertension of "180." Since then he had had occasional epistaxis and had been more irritable. He had been unemployed for several months and had been worried about the financial situation of his family.

Fig. 1.—The heart, aorta and common iliac arteries. The small intimal tear in the first portion of the aorta is shown, with the extent of the dissecting hemorrhage and the collection of blood at the bifurcation and in the wall of the left common iliac artery. The wide distention of the separated media by blood in the latter regions bulged the intima inward and functionally obstructed the natural lumens.

Examination.—At entry, four hours after the onset of pain, the patient was suffering from intense pain in the left side of the abdomen and in the left leg. He lay flat in bed and was unable to move the left leg. He appeared poorly nourished; his color was pale and sallow. There was moderate arcus senilis. The pupils were equal and regular and reacted to light. Complete upper and lower false dentures were present. In the neck, neither adenopathy nor abnormal pulsation was present. The lungs were resonant throughout. The voice and the breath sounds were normal. Râles were not heard.

The heart was slightly enlarged to the left. A short, rough systolic murmur was heard at the apex. The aortic second sound was accentuated. The rhythm was regular at 110 beats a minute. The radial arteries were moderately thickened. Pulsation was felt in the abdominal aorta but not in any arteries of the legs. The veins of the neck, the legs and the penis were slightly distended.

The blood pressure was 208 systolic, 154 diastolic in both arms. Pressure readings were not obtainable in the legs.

Moderate abdominal distention was present. Bladder dulness extended half-way from the symphysis pubis to the umbilicus. There was general abdominal tenderness, most marked in the left flank. The liver and spleen were not palpable.

The left leg was almost completely paralyzed. The skin over it was cold and discolored with a purplish mottling and was somewhat anesthetic. The knee jerk was sluggish on the right and absent on the left side. The plantar reflex was normal on the right and absent on the left.

Laboratory examination of the blood revealed that the hemoglobin was 125 per cent (Sahli). There were 6,200,000 red blood cells and 23,000 leukocytes per cubic millimeter. The differential count was normal. The clotting time was four and one-half minutes (Lee and White). The specific gravity of a catheterized specimen of urine was 1.011. A trace of albumin was present. The Wassermann and Kahn tests of the blood were negative. Roentgenograms of the chest appeared normal. An electrocardiogram showed a left axis deviation and flattened diphasic T waves in lead I.

Course.—Within two hours the discoloration had extended from the left leg up onto the abdomen. The right foot became cold. The cardiac sounds became poorer in quality.

Seven hours after entry the brachial blood pressure was 120 systolic, 104 diastolic. The venous pressure was estimated at 25 centimeters of water.

Ten hours after entry the systolic blood pressure was 114 in the arms.

On the second day, cyanosis of the face, hands and genitalia became pronounced, and gangrene of the left leg set in. The systolic blood pressure was 118. Only 50 cc. of urine was obtained by catheterization. Respirations became difficult, the pulse became imperceptible and the patient died of circulatory failure on the afternoon of the second day.

It was evident that the blood supply to the lower part of the body had been acutely obstructed. In the differential diagnosis, a thrombus riding the bifurcation of the aorta, an embolus blocking a coarctation of the aorta, and a dissecting aneurysm of the aorta were considered. The absence of cardiac arrhythmia or valvular disease made it difficult to explain the origin of a thrombus. Such a thrombus might come from a previous "silent" coronary occlusion, from a large arteriosclerotic plaque, or from a broken off portion of tumor that had invaded the aorta. These possibilities were unlikely. Coarctation of the aorta was ruled out because of the absence of signs of collateral arterial circulation and the negative roentgen signs. The arterial obstructive symptoms could be explained by the collapse of the inner coats of the aorta by compression of a layer of blood, forced along between the layers of the wall. This would account for the spreading character of the pain.

A clinical diagnosis of dissecting aneurysm was made the day of entry because of (1) the sudden onset of pain, which was progressive in character, spreading to the left lower extremity; (2) the evidence of interference with the arterial circulation to the lower part of the body, and (3) the supportive family history of vascular disease and the past history of hypertension.

Postmortem Examination. (performed forty-five minutes after death).—The left lower extremity was purplish blue, and dry gangrenous changes were noticeable in the skin of the foot. The right lower extremity showed early changes of a similar nature.

The viscera in general showed only intense recent congestion. The kidneys had some cortical narrowing and subcapsular scarring of the type associated with arteriolarsclerosis and hypertension.

The pericardial sac was normal. The heart weighed 420 Gm. The left ventricle was enlarged, rounded and thickened; the maximum thickness of the ventricular wall was 2.4 cm. The

coronary arteries were moderately sclerotic and tortuous. The subepicardial fat at the base of the ventricles was heavily infiltrated by fresh extravasated blood. This extravasation, which continued about the great vessels and into the myocardium of the auricles and interauricular septum, arose in the wall of the root of the aorta from a dissecting aneurysm, which was found in the posterior wall of the aorta throughout its length. The line of dissection was within the media, the hemorrhage having separated an arc varying from 100 degrees in the arch to 300 degrees in the lower abdominal portion. Many of the intercostal, renal and lumbar branches of the aorta appeared as inner tubes, traversing the blood-filled space within the media.

The dissecting hemorrhage did not extend into the larger branches of the aortic arch. It greatly distended the separated media at the bifurcation of the aorta and extended down the length of the left common iliac artery. A large pool of recently clotted blood had collected within the media in this lower region, causing an inward bulging of the intima, which served functionally to close the natural lumens. This functional closure at the bifurcation, particularly of the left common iliac artery, explains the clinical symptoms and circulatory changes in the lower part of the body.

A small transverse tear of the intima and upper media was found behind the right posterior aortic cusp of the semilunar valve. This rupture, about 7 mm. long, occurred through a small atheromatous ulcer. The rupture communicated freely with the dissected, hemorrhage-filled media and could well have been a point of origin for the dissecting blood. The tear might equally well have occurred through the weakened intima after distention of the separated media by hemorrhage originating in the vasa vasorum.

The aorta as a whole was quite inelastic and overstretched, both transversely and longitudinally. When measured, after fixation with formaldehyde, the inner circumference at the root was 6.7 cm.; in the mid thoracic region, 6.2 cm.; in the abdominal portion, 5.3 cm. This places the width in the thoracic and abdominal regions as decidedly above the upper limits

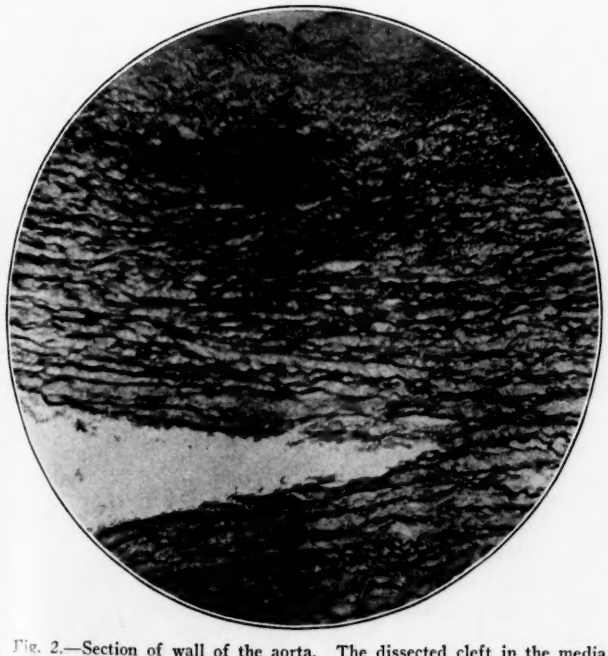

Fig. 2.—Section of wall of the aorta. The dissected cleft in the media is shown. The reduced number, the disorder, the thinning and the fragmentation of the medial elastic lamellae may be seen. Slightly reduced from a photomicrograph with a magnification of 38 diameters.

of normal "senile ectasia," as set forth in the tables of Aschoff.[3] Gross examination revealed the media of the aorta to be unduly separable. The intima contained scattered, raised atherosclerotic plaques of a bluish yellow. A few of these patches

[3] Aschoff, Ludwig: Lectures on Pathology: Atherosclerosis, New York, Paul B. Hoeber, Inc., 1924, pp. 131-153.

situated at the openings of branches in the abdominal region were undergoing calcification.

Microscopic Examination.—Heart: Sections from the base of the heart revealed interstitial infiltration of extravasated blood. A large coronary artery showed intimal and medial sclerosis with narrowing of the lumen. Small arterioles showed

Fig. 3.—Section of wall of a normal aorta from a young woman, taken with the same magnification for comparison with figure 2. The orderly, concentric, numerous and relatively thick elastic lamellae of the media are clearly demonstrated.

a similar narrowing, with scattered small neighboring zones of myocardial replacement fibrosis. The striations of the muscle fibers were quite faint, and many cell bodies showed transverse fractures and a fraying out of the fibrils in the way believed to be associated with myocardial failure.

Aorta: Sections taken from the aorta at various levels showed similar changes. The intima showed scattered thickening by atheromatous material and collagenous fibrous tissue. The internal elastic lamella, as shown by Weigert elastic tissue staining, was fragmented, often reduplicated and frequently indiscernible as a distinct structure. Fat droplets were demonstrated in the intima by scharlach R staining and in an occasional wandering cell in the other coats of the vessel.

The elastic lamellae of the media were greatly reduced in number, individual thickness and continuity. They were remarkably fragmented and frayed out. There was hyaline degeneration and atrophy of the smooth muscle elements with little if any change in their number. There was an increase in the amount of collagenous fibrous tissue, and this showed hyalinization. Many vasa vasorum were obliterated and others had thickened walls and intimal endothelial proliferation, serving to reduce further the narrowed lumens. The separation of the media was found to be at about the juncture of the middle and outer thirds, and at the level to which the thickened vasal vessels were seen to penetrate. The adventitia showed a recent and light infiltration of polymorphonuclears and mononuclear phagocytes.

Figures 2 and 3 are reproductions of photomicrographs taken at identical magnifications of the aorta in this case and a normal aorta. They illustrate the contrast in the number and condition of the medial elastic lamellae.

Comparison Studies of the Pars Media.—The elastic lamellae of the media were counted in sections taken from various portions of the aorta. The number varied from thirty-four in the region of the arch to forty-two at the level of the bifurcation. The average of ten counts was thirty-eight lamellae. In order to estimate by comparison the extent of the changes in the degenerated aorta, sections were examined from the

normal appearing aorta of a woman, aged 18, and from the aortas of five patients, between the ages of 51 and 62, who had died from other diseases incident on arteriosclerosis. The media of the youthful aorta had from sixty-seven orderly concentric elastic lamellae in the region of the arch to sixty-one in the abdominal region, with an average in ten counts of sixty-five lamellae. Maximow [4] describes the media of the normal aorta as having from fifty to sixty-five elastic lamellae. The sections from the aortas of the five older patients all showed less profound degeneration of the elastic lamellae than in our case. Some of these sections showed local regions with more marked atherosclerotic degeneration of the intima and upper media, but the medial coats as a whole were in better order and the vasa vasorum more healthy and numerous. Counts of the elastic lamellae averaged forty-eight, and the lowest count was forty-four.

COMMENT

Tyson [5] has recently published a review of dissecting aneurysms of the aorta and presented five new cases. He discusses the pathogenesis. Tyson believes that degenerative changes in the media are essential for the development of a dissecting aneurysm and that these changes are secondary to obliterative changes in the vasa vasorum from arteriosclerosis or other types of low grade inflammation. He concludes that the aneurysm begins by the rupture of one or more vasa vasorum into a weakened medial layer and that a tear of the intima is not essential to formation. In fact, he believes that when intimal tears do occur they are probably secondary to the development of the aneurysm.

Whitman and Stein [6] have described the degenerative changes in the media in cases of dissecting aneurysms. They quote and corroborate the views of Babes and Mironescu that the condition is almost a disease entity, a dissecting mesaortitis, or what the latter authors have termed a "mesarteritis dissecans." The medial changes described by Whitman and Stein [6] are essentially those found by Tyson in his cases and by Aschoff [3] in "senile ectasia" of the aorta and are the important conditions found in the case reported here. There seems to be little reason to call "mesarteritis dissecans" a separate disease entity, unless to indicate that the culmination, or pathologic end-point, in a given case of arteriosclerosis has been reached in the vasa vasorum of the aorta instead of in the coronary circulation of the heart, the lenticulostriate vessels of the brain, or the cortical arterioles of the kidneys.

There were no indications of the presence of syphilis in this case. The low incidence of syphilitic mesaortitis in cases of dissecting aneurysm has often been commented on. It seems probable that the lesions of syphilis in the aorta, being more focal in their intensity, lead to a localized rather than a generalized weakening of the wall.

SUMMARY

1. A correct clinical diagnosis of dissecting aneurysm of the aorta was made in a case on the day of entry to the hospital. This diagnosis was made because of (*a*) the sudden onset of pain, which was progressively spreading in character; (*b*) the evidence of interference with the arterial circulation to the lower part of the body, and (*c*) the supportive family history of vascular disease and the past history of hypertension,

2. Necropsy revealed a dissecting aneurysm in the medial coat of the entire length of the aorta and the left common iliac artery, in association with a generalized arteriosclerosis and a hypertensive type of left ventricular cardiac hypertrophy.

3. The dissection of the media was facilitated by an extensive obliterative sclerosis of the vasa vasorum, which led to its profound degeneration. The reduction in number of elastic lamellae amounted to about 40 per cent, when directly studied in comparison with the normal aorta of a young adult. It was also found that the degeneration of the media was greater than that in the aortas of five patients who died from other diseases incident on arteriosclerosis.

4. Additional support is given the theory that dissecting aneurysms are the result of an increased separability of the media due to its profound degeneration. This degeneration is not a disease entity but is secondary to arteriosclerosis, which has reached a summit in the nutrient arterioles of the aorta, rather than in the more frequent sites of the heart, brain or kidneys.

Parnassus and Third Avenues.

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5. Tyson, M. D.: Dissecting Aneurysms, Am. J. Path. **7**: 581-604 (Nov.) 1931.

6. Whitman, R. G., and Stein, H. B.: A Contribution to the Pathogenesis of Dissecting Aneurysms of the Aorta, J. M. Research **44**: 579-591 (Sept.) 1924.

DIFFUSE INTRATUBULAR TUBERCULOSIS OF THE HUMAN TESTICLE

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When tuberculosis of the testis was first accepted as a disease, caseation was taken as the diagnostic criterion and gross examinations alone sufficed. Such a standard for diagnosis, of course, did not separate tuberculosis from other caseous diseases. Later, when the histologic structure of tuberculous lesions was established, the microscopic examinations and the demonstration of acid-fast bacilli in characteristic tissue lesions became the standards of reference. In 1877, Gaule [1] stated that there were two interpretations of the genesis and composition of testicular tuberculosis. The first was from Virchow, who noted the testicle tubercle always as a small gray translucent nodule similar in structure to the miliary tubercles of other viscera and the larger lesions as conglomerates of these smaller nodules; the other from Rindfleish, who described larger spherical caseous nodules which conglomerated into groups, became confluent and formed lesions with an irregularly nodular or branched configuration. According to Rindfleish, the spherical caseous nodules did not arise from miliary lesions but formed by a successive growth of vascular interstitial tissues and their fibrous organization. The fibrous texture persisted as long as caseation had not occurred.

Among the older writers, opinions diverged on whether the caseous masses lay within the seminiferous tubules or between them. According to Gaule, the first was proposed by Carswell and Heath, while Curling and A. Cooper believed that tuberculous material could be deposited as well within as without the tubules, and von Hertf in 1855 demonstrated that the tubules

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From the Henry Baird Favill Laboratory of St. Luke's Hospital, and the Norman Bridge Pathological Laboratory of Rush Medical College of the University of Chicago.

1. Gaule, Justus: Anatomische Untersuchungen über Hodentuberkulose (Phthisis testis), Virchows Arch. f. path. Anat. **69**: 64-92, 213-245, 1887.

extended into nodules of the testis, communicated with the cavities there, and were filled with caseous material. Gaule's further discussion centered on the intratubular and interstitial spread of the infection. Waldstein,[2] in 1881, reviewed the opinions on the interstitial and intratubular spread of tuberculosis advanced by the various authors and reduced his conclusions to a statement that tuberculosis of the testis is an inflammatory process characterized at first by focal lesions. Waldstein emphasized the studies of von Herff, who was the first to localize the process of tubercle formation in the testis in a precise way and who differentiated between an interstitial variety and a true tuberculosis of the testis which progressed with deposits in the interior of the tubules. Federmann[3] investigated the behavior of the elastic tissues in testicular tuberculosis and syphilis. Of the tuberculous testes which he studied, fifteen were classified as canalicular and two as interstitial. He found the inception of the changes of the canalicular form in the tubular epithelium, usually as a hyperplasia of the cells lying close to the wall. He noted two varieties: In the one form, which included almost all of his material, the entire tubule was filled with a conglomerate mass of epithelial, round and spindle cells, often with fatty changes. The tubule was markedly dilated. This cell hyperplasia commonly extended beyond the disrupted elastic wall of the tubules and into the interstitial tissues. In the second, rarer, form, the central part of the canal lumen contained epithelial cells in regular order or slightly compressed. Around these was a marked tissue hyperplasia far beyond the original elastic wall but like the preceding form. The tuberculous granulation tissues had extended from the basal portions of the tubule epithelium and had left intact the central epithelial cells, or the reactions had started from the connective tissue wall and had displaced inwardly the entire epithelial lining. Meyer[4] also reported a similar study of the intracanalicular form of testis tuberculosis and described essentially the same results. He noted interstitial tubercles even in the very pure intracanalicular forms of testis tuberculosis. Hueter's[5] discussion of the spread of genital tuberculosis mentioned many proponents and opponents of the spread of the disease against the secretion stream. The adherents of the antisecretion theory, he stated, had in their favor the facts that tuberculous epididymitis antedated the testicular tuberculosis and that in the spread of tuberculosis from the prostate and seminal vesicles the epididymis was involved before the testis. He concluded that the changes in tuberculosis of the testis and epididymis were intracanalicular as well as interstitial.

Baumgarten,[6] by injecting tubercle bacilli directly into the testes of rabbits, produced interstitial lesions. The lumens of the tubules surrounded by the granulation tissues became smaller; the tubular epithelial linings became indefinite and finally disappeared. Baumgarten did not observe an ascending infection and considered the lesions produced in these animals similar to those in man with hematogenous or lymphogenous dissemination. Kraemer[7] injected tubercle bacilli into the vas deferens of rabbits and noted a cessation of spermatogenesis after four weeks. The initial changes were intratubular and from here the inflammation spread into the surrounding tissues. Kraemer concluded that obstruction spread the infection into the terminal portions of the testicular tubules.

A recent summary by Oberndorfer[8] stated that in the tubules of the testis, as in other epithelial lined canals, the tubercle bacilli presumably at first stimulate reactive changes immediately beneath the epithelium and then in the epithelium. The initial changes, subepithelial but within the membrana propria, may be slight, purely exudative, limited to a few round cells, and not distinctive. A hyperplasia of the connective tissue cells follows promptly. Finally the canal lumen becomes filled with masses of desquamated epithelium, round cells, leukocytes or, gradually, granulation tissues. The epithelium, at first lifted up from

Fig. 1.—Surfaces made in bisecting the body of the testis, showing lobular divisions, diffuse and even distribution of the tissue changes, and absence of tubercles. Scale in millimeters.

below, is more and more completely destroyed and the tuberculous inflammation for some time is held in restraint by the elastic fibers of the basal layer. This, too, gradually is destroyed.

Intratubular forms of testicular tuberculosis, according to these summary statements, are recognized generally and have been studied with care. Testes with this form of tuberculosis doubtless progress into the chronic stages with caseation and fistulas or extensive scar tissue contraction and become so altered by the destructive disease that the initial characteristics are lost. The gross descriptive portions and the histologic details of many of the published reports of testicular tuberculosis, however, fail to mention as exquisitely a diffuse intratubular form of testicular tuberculosis as the fol-

2. Waldstein, Louis: Zur Kenntniss der tuberkulösen Erkrankungen des Hodens, Virchows Arch. f. path. Anat. **85**: 399-445, 1881.

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8. Oberndorfer, S.: Die inneren männlichen Geschlechtsorgane, in Henke, Friedrich, and Lubarsch, Otto: Handbuch der speziellen pathologischen Anatomie und Histologie, Berlin, Julius Springer **6**: 647 (part 3), 1931.

lowing paragraphs describe. The changes in this testis grossly did not characterize the disease, although obviously the entire body was involved uniformly and equally:

J. S., a white man, aged 37, unmarried, an elevator operator, who entered the urologic service of St. Luke's Hospital, Oct. 23, 1932, in the care of Dr. Andrew McNally, for nine weeks had had a painless swelling of the right testis, initiated by fever for two days, joint pains, and general malaise. On the third day the right testicle was swollen. Bloody mucus was noted in the urine on the first day and several times later. He stated that he had never had syphilitic or gonorrheal infections. He was thin and pale, and the right testis was swollen to the size of a goose egg. This testicle was excised, October 24. He had a slight postoperative fever for several days. The Wassermann and Kahn tests of the blood serum, November 11, were negative. Two guinea-pigs inoculated, November 11, with sediment of a single urine sample and with all the sediment of a twenty-four hour collection, November 29, were examined, Jan. 15 and Jan. 24, 1933. Neither was tuberculous.

The right testis, the epididymis and the funiculus tissues weighed 69 Gm. The testicle was 6.5 cm. long, 3 cm. thick, and 3.5 cm. wide. The epididymis tissues were slightly swollen but there were no obvious changes. The vas deferens was not altered grossly. The tunica albuginea of the testis was pale white and smooth. The surfaces made by bisecting the body of the testis to the mediastinum were firm, tan-brown tissue divided by thin septulas into lobules from 1 to 5 mm. wide (fig. 1). These brown tissues bulged slightly from the compartments, and the surfaces between two septulas were slightly convex. The seminiferous tubules were firmly embedded and could not be drawn out in long tortuous strands as from an undiseased gland.

Histologic preparations of the testis were stained with hematoxylin-eosin, Mallory's aniline blue, van Gieson, phosphotungstic acid-hematoxylin, and Weigert's elastic fiber stains. These histologic preparations demonstrated an exquisitely diffuse intratubular exudate (fig. 2) and a uniform disintegration of practically all the lining epithelium or a retention only of small remnants. The exudates consisted of epithelioid cells, lymphocytes, plasma cells, some fibroblastic tissues, a few polymorphonuclear leukocytes, and occasional Langhans' giant cells (fig. 3). They filled the lumens of practically every tubule, dilated the tubular structures and spread through the wall,

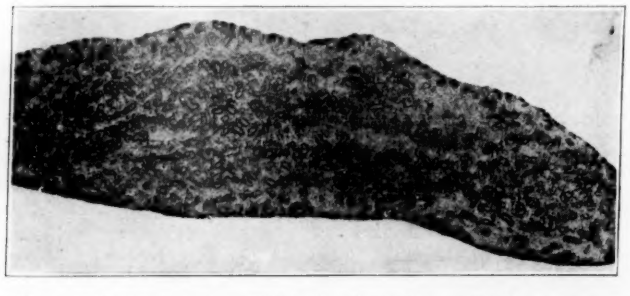

Fig. 2.—Appearance of a histologic preparation under low power to illustrate further the diffuse intratubular distribution of the tuberculosis.

fragmenting and separating the concentric laminae of connective tissues. The individual tubules were surrounded by other concentrically arranged fibroblastic tissues and collars of exudate cells, mainly plasma cells and lymphocytes. The interstitial stroma elements were edematous and mainly collagenous fibrils or fibroblastic connective tissue, also infiltrated extensively or moderately by plasma cells and tissue eosinophil leukocytes. Caseation was not conspicuous, although present focally in some of the exudate tissues within the tubules. The few seminiferous tubules without exudates were markedly compressed and had a few large lining cells but no spermatogenesis. Similar tissue changes were present in the epididymis. The lumens of some of the tubules were empty. Others contained exudates of large monocytes (epithelioid cells) and a few polymorphonuclear leukocytes, and a small number were dilated widely with exudate cells and granulation tissues. The inflammatory changes extended into the surrounding interstitial tissues. Acid-fast bacilli were demonstrated among the exudate cells in the tubules of the epididymis. Monocytic and leukocytic exudates, less abundant, filled the lumen of the vas deferens 10 cm. from the epididymis. The submucosal tissues were edematous and had slight chronic inflammatory cellular exudates.

COMMENT

Histologic examinations were necessary to establish the nature of an extensively diffuse intratubular tuber-

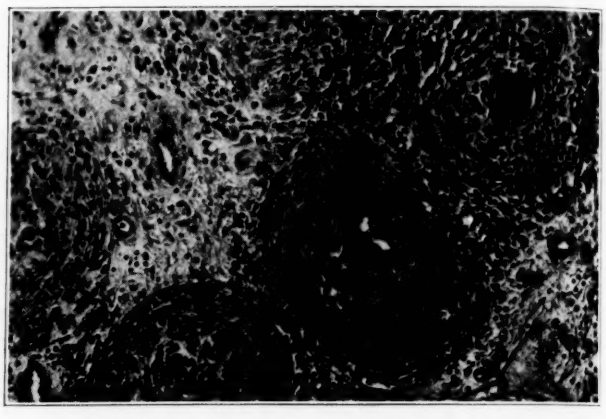

Fig. 3.—Histologic structure and tubular distribution of the tissue changes. Reduced from a photomicrograph with a magnification of 352 diameters.

culosis of the testis. The infection probably was diffused throughout the testicular tubules by an obstructive retrograde spread of tuberculous exudates from the vas and the epididymis. No clinical information is available on which to localize the initial genital tuberculosis beyond the vas: that is, in the seminal vesicles or prostate. The patient, however, had noted a bloody mucus in the urine when the enlargement of the testicle began. The attempts to demonstrate tuberculosis of the urinary tract subsequent to the right orchidectomy were not successful.

Long[9] and others have noted the marked exudative reaction and subsequent tissue changes in the testes of tuberculous guinea-pigs following the testicular injection of small quantities of tuberculin. Presumably, human tissues manifest a similar allergic response.

The marked cellular reactions in the testis of this patient, accordingly, are the summation of an intratubular tuberculous infection in a sensitized host.

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Purchasing Thimbles in a Jewelry Shop.—At least 80 per cent of the illnesses that occur and practically all of the preventive measures employed are quite within the knowledge and skill of a competent and properly trained practitioner. The specialist is a consultant whose services are relatively rarely required and then usually on the advice of the family physician, who knows when the greater knowledge or skill is essential and where it can be found. As one should not complain about the high cost of thimbles if one insists on purchasing them in a jewelry shop, so there should be but little sympathy over the financial burden of one who employs a specialist to treat a cold and much less for him who periodically subjects his anatomy to a search for the trivial by a battery of highly trained and expensively equipped specialists. —Harvey, S. C.: Oikonomia Medika, *Yale J. Biol. & Med.* **5**:323 (March) 1933.

DEXTROSE THERAPY IN DISEASES OF THE LIVER

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The first clinician to advocate treatment of an hepatic disease with dextrose was A. P. Beddard,[1] in 1908. In 1915, Opie and Alford [2] and, independently, Graham [3] furnished the experimental basis for this therapy by demonstrating that feeding of carbohydrate lessens the susceptibility of rats and dogs to necrosis of the liver caused by chloroform and by phosphorus. Later this was confirmed by Davis and Whipple [4] for chloroform poisoning, while Davis [5] demonstrated the same effect in intoxication by carbon tetrachloride.

THERAPEUTIC ADMINISTRATION OF DEXTROSE

In recent years much interest has been shown in dextrose as a remedy for a variety of disorders of the liver. Experimentally, in addition to its protective influence against hepatic poisons, administration of dextrose has been shown to compensate partially for functional deficiency of the liver induced by Eck fistula [6] and by hepatectomy.[7] In acute intoxications following intraperitoneal injections of trypsin or photodynamic injury in lethal doses, instillations of dextrose were capable of forestalling the fatal outcome; [8] likewise in experimental poisoning with the mushroom Amanita phalloides, which produces hepatic necrosis closely resembling that of chloroform and of acute yellow atrophy of the liver.[9]

Clinically, Böckelmann [10] observed the beneficial effects of increased feeding of carbohydrate in acidosis of pregnancy, and Blöch [11] described the disappearance of lipemia and ketosis after administration of dextrose in patients with diffuse hepatic damage. Of the acute hepatic intoxications in man, beneficial and sometimes brilliant results with dextrose therapy were achieved in subacute yellow atrophy of the liver, in arsphenamine injury, in mushroom poisoning with Amanita phalloides, and, as already mentioned, in delayed chloroform poisoning.[12] Among chronic diseases of the liver, good therapeutic results with dextrose in cirrhosis of this organ were reported by Baehr and Klemperer.[12]

SIGNIFICANCE OF HEPATIC GLYCOGEN

The protective action of diets high in carbohydrate is apparently based on an abundance of glycogen in the liver. Young pups, as shown by Whipple,[13] are very resistant to chloroform poisoning. Graham [3] confirmed this and found that pups had considerably more hepatic glycogen than adult dogs, and that when it was lowered by fasting, phlorhizin, or during normal growth, the animals lost their resistance to chloroform. Davis [5] observed that "a liver well stored with glycogen is refractory to large doses of either chloroform or carbon tetrachloride." Bollman [14] makes a similar statement in respect to chloroform and to phosphorus.

On the contrary, a low glycogen content of the liver affects unfavorably certain functions of the liver. Diminished tolerance to dextrose follows the reduction of hepatic glycogen.[15] When this is accomplished by fasting or by feeding of diets low in carbohydrate, the reduction of sugar tolerance is in part due to deficiency of insulin. However, there is no such deficiency in animals in which glycogen of the liver is reduced by muscular exercise. Von Noorden and Isaac [16] claim that the reduction in tolerance to dextrose of animals with low hepatic glycogen is due to diminished glycogenogenesis, the rate of which depends on the existing supply of glycogen from which energy for polymerization of dextrose is derived through its transformation into lactic acid. In accord with this theory is the work of Geiger [17] on hibernating frogs, in which marked depletion of hepatic glycogen interferes with the ability of the liver to synthesize lactic acid to glycogen.

Another function of the liver, that related to metabolism of pigments, also becomes disturbed with a decrease in hepatic glycogen. According to the work of Bang [18] with human beings, increased urobilinuria appears whenever carbohydrates in the diet are decreased below a certain level.

Of the greatest importance in deficiency of glycogen in the liver is the impairment of the hepatic function of detoxication. Experimentally, Sansum and Woodyatt [19] found that animals treated with phlorhizin are easier to kill with chloroform than are normal animals; while Davis [5] and Bollman [14] noticed that such hepatic poisons as chloroform, carbon tetrachloride and phosphorus are more effective in animals with a reduced glycogen content of the liver. Guttmann [20] found that undernutrition markedly increases the incidence of arsphenamine icterus. Baehr and Klemperer [12] observed similarly that diabetic patients on a low carbohydrate diet stood arsenical therapy poorly and frequently developed jaundice.

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MECHANISM OF ACTION

There are several ways in which dextrose, and the same applies to glycogen, has been proved to have an allaying action in hepatic injury. In the first place, dextrose neutralizes many exogenous and endogenous toxins. This may be accomplished by partial oxidation to less toxic compounds or by complete oxidation to carbon dioxide and water. Another path lies through conjugation to nontoxic glycuronates. The latter is known to occur with cresols, phenols, salicylates, camphor, and many substances containing these compounds (e. g., morphine). Confirmatively, Becher [21] found that the phenols of the blood are increased, and Sauer [22] has shown that the glycuronic acid of the urine is diminished in patients suffering from various types of diseases of the liver.

In the second place, under carbohydrate therapy, repair of the injured liver proceeds much more rapidly. This was demonstrated in dogs by Davis, Hall and Whipple [23] after poisoning with chloroform and by Ravdin [24] in experimental obstructive jaundice following removal of the ligature of the common bile duct.

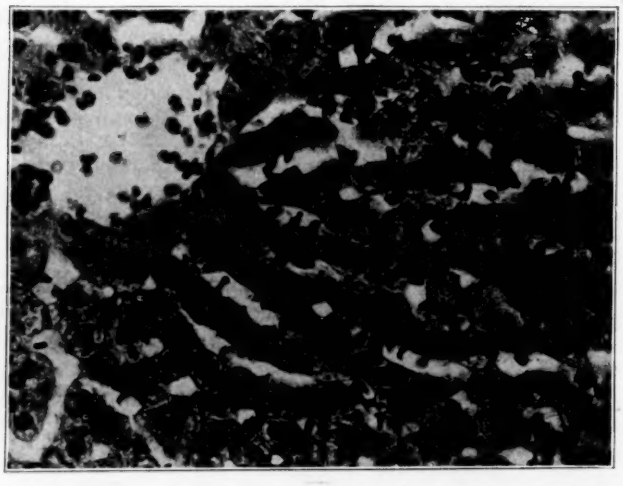

Fig. 1.—Liver of a normal rabbit in which the glycogen level was reduced by fasting to 1.5 per cent; × 250.

In the third place, administration of dextrose reduces prolonged coagulation time in jaundice.[25]

EFFECT OF HEPATIC INJURY ON GLYCOGEN

It is unfortunate that, in hepatic disease when the liver is in urgent need of glycogen, its supply of this substance should be low. This was first shown in experimental arsenical and phosphorus poisoning by Rosenbaum [26] in 1882 and since then has been confirmed by many observers, including ourselves,[27] in hepatic damage due to intoxication with chloroform, phosphorus and manganese. Ravdin also found marked reduction in the glycogen of the liver in experimental obstructive jaundice.[24]

The reason for a low level of glycogen in the injured liver is important clinically. In the literature, the statement is frequently made that the damaged liver "loses its ability to store glycogen." If this is correct, therapeutic attempts at increasing the glycogen content of the liver must be useless. However, certain of our experimental data suggest that the lowering of hepatic glycogen may be due, not to an inability on the part of the liver to store glycogen, but to abnormally slow production of new glycogen from noncarbohydrate sources. Such slowing of sugar production by the injured liver is indicated by its inability in experimental animals [28] and patients [29] with diseases of the liver to compensate for increased sugar utilization in the tissues brought about by injections of insulin. This inability results in hypoglycemia, which takes place in cases of hepatic damage following the administration of certain amounts of insulin and dextrose. The hypoglycemia produced under such conditions is not counteracted by epinephrine, but the blood sugar returns spontaneously to its previous level in the course of several hours. A low glycogen content of the liver in itself does not result in hypoglycemia under such conditions. This has been shown previously by appropriate experiments on normal animals with the hepatic glycogen reduced by fasting and by thyroxine even below the level found in our rabbits with hepatic injury.[30] Other evidence of insufficient gluconeogenesis in the injured liver is the well known tendency to lowering of the blood sugar level, which is seen both in experimental animals with hepatic damage and in patients with diseases of the liver. If carbohydrate were produced at a normal rate but could not be retained in the liver as glycogen, one should expect, if anything, an increase in the circulating sugar of the blood.

If the described conception is correct, it means that the glycogen of the liver in hepatic disease is low because there is not enough carbohydrate available for storage as glycogen, in which case administration of dextrose would be the indicated remedy.

NATURE OF HEPATIC GLYCOGEN

The question of the essential nature of hepatic glycogen is of interest to any one attempting to influence the content of glycogen in the liver. The conception of the nature of glycogen passed through three stages and is now entering a fourth stage. Claude Bernard, who discovered glycogen, thought it was a secretion of the liver because he found that it could be produced by this organ on a diet devoid of starches. Later glycogen came to be regarded as a storage product of carbohydrate material, much in the same manner in which fat is regarded as a storage product of lipoid material. Recently, the work of Markowitz,[31] Barbour, Chaikoff, Macleod and Orr [32] and others undermined this conception by showing, in the first place, that it is impos-

21. Becher, Erwin: Ueber Steigerung des Blutwertes von Phenol und Phenolderivaten und über das Auftreten von freiem Phenol im Blute bei Leberzirrhose, München. med. Wchnschr. **77:** 751 (May 2) 1930.

22. Sauer, Joachim: Die Quantitative Glykuronsäurebestimmung im Harn ist eine Leberfunktionsprüfung, Klin. Wchnschr. **9:** 2351 (Dec. 13) 1930.

23. Davis, N. C.; Hall, C. C., and Whipple, G. H.: The Rapid Construction of Liver Cell Protein on a Strict Carbohydrate Diet Contrasted with Fasting, Arch. Int. Med. **23:** 689 (June) 1919. Davis, N. C., and Whipple, G. H.: Liver Regeneration Following Chloroform Injury as Influenced by Various Diets, Arch. Int. Med. **23:** 711 (June) 1919.

24. Ravdin, I. S.: Some Aspects of Carbohydrate Metabolism in Hepatic Disease, J. A. M. A. **93:** 1193 (Oct. 19) 1929.

25. Ravdin, I. S.; Riegel, Cecelia, and Morrison, J. L.: Coagulation of Blood: I. The Comparative Values of Calcium and Glucose as Agents for Decreasing the Clotting Time, Ann. Surg. **91:** 801 (June) 1930.

26. Rosenbaum, F.: Kolehydratbestand nach akuten Intoxicationen, Arch. f. exper. Path. u. Pharmakol. **15:** 450 (May) 1882.

27. Althausen, T. L.: Effects of the Administration of Glucose and Insulin on the Glycogen Content of Normal and Experimentally Damaged Livers, Ann. Int. Med. **6:** 193 (Aug.) 1932.

28. Althausen, T. L., and Thoenes, E.: Influence on Carbohydrate Metabolism of Experimentally Induced Hepatic Changes: II. Phosphorus Poisoning, Arch. Int. Med. **50:** 58 (July) 1932; III. Chloroform Poisoning, ibid. **50:** 257 (Aug.) 1932.

29. Althausen, T. L.; Gunther, Lewis; Lagen, J. B., and Kerr, W. J.: Modification of the Dextrose Tolerance Test as an Index of Metabolic Activity of the Liver, Arch. Int. Med. **46:** 482 (Sept.) 1930.

30. Althausen and Thoenes.[15]

31. Markowitz, J.: Glyconeogenesis, Am. J. Physiol. **74:** 22 (Sept.) 1925.

32. Barbour, A. D.; Chaikoff, I. L.; Macleod, J. J. R., and Orr, M. D.: Influence of Insulin on Liver and Muscle Glycogen in the Rat Under Varying Nutritional Conditions, Am. J. Physiol. **80:** 243 (April) 1927.

sible to rid the liver entirely of glycogen, which should be the case if it were purely a storage product; and, in the second place, that during starvation the amount of glycogen in the liver at first is markedly diminished but later increases again. These facts were responsible for a new theory of glycogen, namely, that it is an essential step in glyconeogenesis, and that the amount of it in the liver at any given time represents the balance between continuous processes of production and loss.

Since then, new experimental data have been obtained. Mouriquand and Leulier [33] and also Forsgren [34] found wide variations in the content of glycogen in the normal liver. In addition, Forsgren described a regular daily cycle in the level of hepatic glycogen. This suggested the existence of two kinds of glycogen: one, perhaps, as an obligatory step in the transformation of noncarbohydrate material into dextrose, or, perhaps, as a basal glycogen necessary for the functioning of hepatic cells; the other merely a storage form of carbohydrate available for metabolism in general. Such a dual conception of the physiologic nature of hepatic glycogen finds support in recent experiments of Macleod [35] in which decerebration after severance of the parasympathetic pathway to the liver was ineffective in exciting an increased sugar discharge from this organ when the hepatic glycogen was low. The usual hyperglycemia was obtained under these conditions when the content of glycogen was high. The results, according to Macleod, may indicate that the glycogen associated with gluconeogenesis is under parasympathetic nerve control, while the glycogen representing a storage form of dextrose can be reconverted into dextrose through other influences.

INCREASING THE GLYCOGEN IN DAMAGED LIVERS

From theoretical considerations and empirical manifestations alike, it is desirable to increase the hepatic glycogen in diseases of the liver. A fair amount of

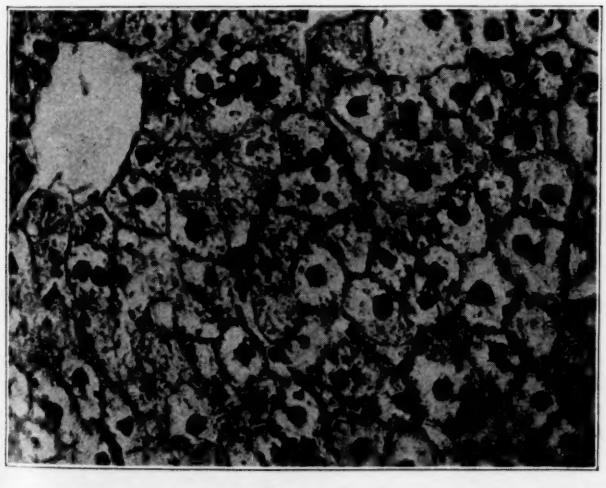

Fig. 2.—Liver of a normal rabbit in which the hepatic glycogen was increased by the administration of dextrose to 10.8 per cent; × 250.

glycogen in the liver signifies that enough carbohydrate is present for detoxication and for other needs of the present and of the immediate future.

In normal animals, administration of suitable amounts of dextrose leads directly to deposition of glycogen in the liver. In diseases of the liver, such deposition of glycogen has been denied because the reduction of dextrose tolerance frequently seen in cases of hepatic damage was interpreted as indicating failure on the part of the liver to remove dextrose from the

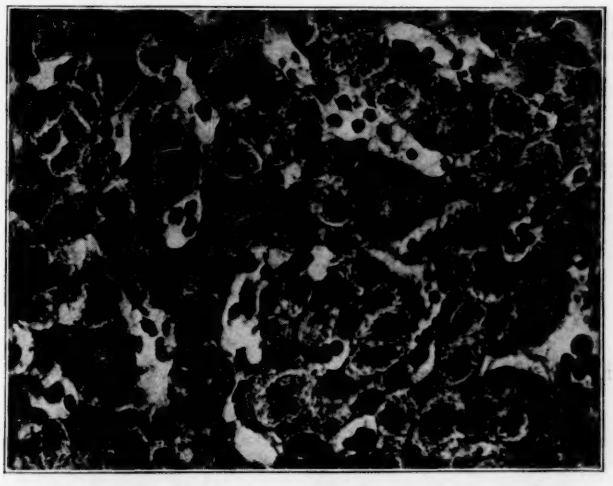

Fig. 3.—Biopsy specimen from the liver of a patient suffering from chronic pancreatitis with obstructive jaundice (duration twenty-five days) and chronic hepatitis. No dextrose was given preoperatively; × 250.

blood for storage.[36] For the correction of this condition, insulin is being commonly advocated, especially abroad. I have shown elsewhere [27] that at least in experimentally injured livers the addition of insulin to dextrose administration has actually the opposite effect, that of reducing the glycogen content of the liver. In connection with this, it is significant that clinical reports are beginning to appear in which insulin therapy in diseases of the liver is considered "overrated" and "harmful." [37]

To test the ability of the injured liver to store glycogen, experiments were carried out on rabbits, after poisoning with phosphorus. As previously reported,[27] the damaged livers doubled their content of glycogen three hours after a single oral administration of 2.5 Gm. of dextrose per kilogram of body weight. The absolute increase of hepatic glycogen in these experiments was much smaller than in normal rabbits, but the low initial level of glycogen in the liver of the poisoned animals must be taken into consideration because the same was also observed in normal rabbits, in which the glycogen of the liver was markedly reduced by fasting or by medication with thyroxine.

METHODS

A somewhat different series of observations was made on a group of patients with marked subacute or chronic involvement of the liver who were to undergo abdominal operations. These patients received preoperatively various amounts of dextrose orally or by intravenous infusion. A small wedge-shaped piece of the liver was removed in each instance for microscopic examination. In taking such a biopsy for information on the hepatic glycogen, it is well to do it early in the operation, because, as has been shown in animals, the liver loses half of its glycogen after one

33. Mouriquand, J., and Leulier, A.: Récherches expérimentales sur le métabolisme des glucides à l'état normal et au course de l'inanition, Compt. rend. Soc. de biol. **98:** 1110 (April 21) 1928.
34. Forsgren, E.: On Relationship Between Formation of Bile and Glycogen in Liver of Rabbit, Skandinav. Arch. f. Physiol. **53:** 137, 1928.
35. Macleod, J. J. R.: The Control of Carbohydrate Metabolism, Lancet **1:** [illegible] (May 21) 1932.

36. Garnstein, M. A. B., and Swarzmann, H. L.: Observations cliniques sur le traitement insulino-glycosique des affections parenchymateuses du foie, Arch. d. mal. de l'app. digestif. **20:** 1070 (Nov.) 1930.
37. Brugsch, T.: Die Leber in der Chirurgie, Zentralbl. f. Chir. **59:** 1578 (June 25) 1932. Büttner: Ueber Leberkoma und Insulin-Traubenzuchernachbehandlung, ibid. **59:** 1581 (June 25) 1932.

hour of ether anesthesia.[38] In the light of Forsgren's work on the cyclic variations of hepatic glycogen, all patients were uniformly fasted over night and operated on in the morning. Most of the biopsies were obtained with the cooperation of Drs. H. G. Bell and J. H. Woolsey, to whom I am indebted.

For a control group, several patients were used from whom biopsies of the liver were obtained prior to 1925,

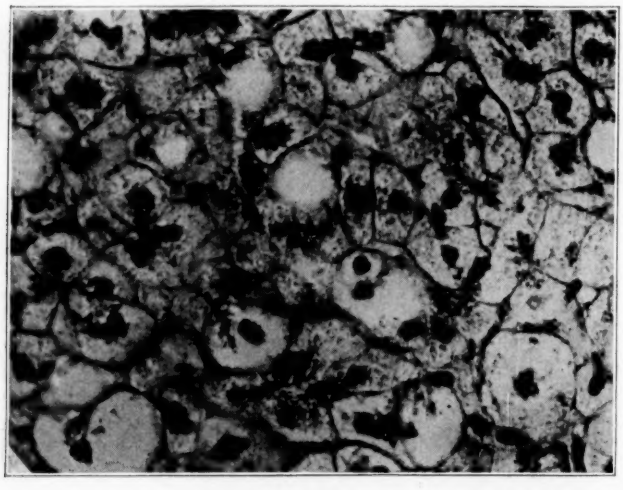

Fig. 4.—Biopsy specimen of the liver in a case of chronic cholangeitis with jaundice (duration seven weeks), diffuse hepatitis, and biliary cirrhosis. This patient received dextrose by mouth three times a day for two weeks. The daily dose was 150 Gm. for ten days and 300 Gm. during the last four days. Twelve hours before the operation she was given 75 Gm. of dextrose intravenously; × 250.

when such cases were still treated surgically without an intravenous infusion of dextrose as part of the preoperative routine.

One group of patients received 50 or 100 Gm. of dextrose by mouth three times a day for from one to two weeks preoperatively. In addition, these patients were given an intravenous infusion of dextrose twelve hours before the operation.

Another group of patients was given two intravenous infusions of dextrose (from 500 to 1,000 cc. of a 10 per cent solution) a day, for from one to five days, the last injection being given on the morning of the operation.

In these three groups, biopsy specimens of the liver with approximately equal degrees of damage were compared microscopically in regard to their content of glycogen. The slides were also compared with sections of rabbit liver containing known amounts of this substance [39] (figs. 1 and 2).

No chemical determination of the glycogen content of human livers was attempted because of the small amount of hepatic tissue at my disposal. Moreover, I would have lacked control data on patients who received no dextrose before operation.

RESULTS

Biopsy specimens from fourteen patients in these three groups were examined in the described manner. From a comparison of typical sections reproduced here, it is readily seen that the livers of patients who received no dextrose before operation are almost devoid of glycogen (fig. 3) and closely resemble that of the rabbit with a glycogen content of only 1.5 per cent. The parenchymatous cells of the liver in these sections are narrow, and their cytoplasm takes a dark stain. The sinusoids and bile capillaries are wide.

On the other hand, the hepatic cells in sections from patients who received large amounts of dextrose by mouth are literally filled with glycogen (fig. 4) and have the appearance of those of the rabbit with 10.8 per cent of glycogen in its liver. In these sections the large, clear, intracellular spaces represent granules of glycogen, and the cells themselves are so distended that the blood and bile channels are compressed.

The cells in the third group, in which the patients received dextrose intravenously, contain only moderate amounts of glycogen (fig. 5), as indicated by their feathery appearance. The probable reason for this is that patients in this group received considerably less dextrose than those in the second group.

My observations prove that even the severely injured liver in the rabbit and in man does not lose its ability to store glycogen but will do so to a marked degree when sufficient exogenous dextrose is provided. This also supports the view that the low level of hepatic glycogen in diseases of the liver is due to a shortage of carbohydrate in the body, caused by slowing of the transformation of noncarbohydrate material into dextrose. When enough sugar is supplied to relieve the persistent demand on the liver for more carbohydrate, this organ at once begins to store glycogen. The fact that lipemia, ketosis and relative hypoglycemia are observed in cases of hepatic disease and also in starvation is another link in this chain of evidence that in diseases of the liver there is an internal hunger for carbohydrate.

INDICATION FOR DEXTROSE THERAPY

Administration of dextrose is indicated when it is desired: (1) to reduce the working load of the liver; (2) to correct metabolic derangements due to hepatic

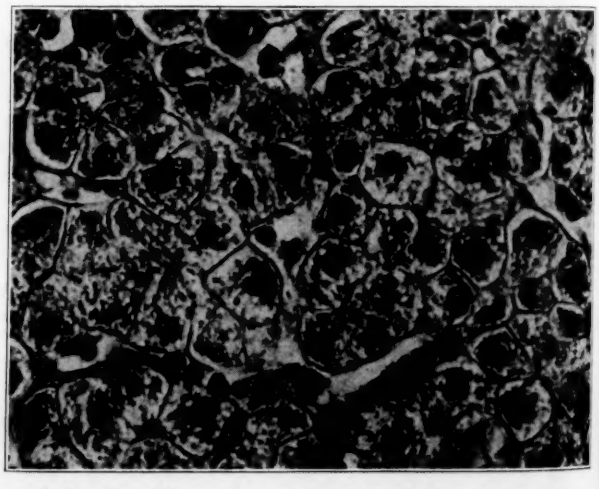

Fig. 5.—Biopsy specimen from the liver of a patient with severe catarrhal jaundice (duration twenty-three days). This patient was given 200 Gm. of dextrose daily for five days by the intravenous route; × 250.

insufficiency; (3) to aid detoxication, especially if the toxins are of unknown origin and cannot be otherwise eliminated; (4) to favor rapid regeneration of hepatic parenchyma, and (5) to shorten prolonged coagulation time in jaundice. One or more of these indications are present in all primary diseases of the liver and also in cases of secondary functional hepatic insufficiency.

It is desirable to give to patients with hepatic disease rather large amounts of dextrose because, by supplying

38. Evans, C. L.; Tsai, Chiao, and Young, F. G.: The Behavior of Liver Glycogen in Experimental Animals: I. Methods: The Effect of Ether and Amytal, J. Physiol. **73**: 67 (Sept.) 1931.

39. The whole liver of these animals was macerated in boiling potassium hydroxide and duplicate aliquot portions were analyzed by the method of Pflüger and Bertrand.

enough of it for all energy requirements, one is sparing the liver the effort of producing dextrose from non-carbohydrate sources. The human body at rest requires 30 calories or 8 Gm. of dextrose per kilogram of weight. An individual weighing 70 Kg. needs, thus, 560 Gm. of dextrose. Assuming that daily about 300 Gm. of carbohydrate can be readily obtained from the diet, there remains 260 Gm. of dextrose which can be supplemented advantageously. This figure will be higher if the patient is permitted physical activity. Sections from the liver of patients who received dextrose in amounts satisfying all energy requirements demonstrate by their high content of glycogen that the desired objective had been reached.

METHODS OF ADMINISTRATION OF DEXTROSE

The best way of giving dextrose to patients with hepatic disease is by means of a high carbohydrate diet with additional feedings of from 50 to 100 Gm. of dextrose in fruit juices three times a day. More dextrose can be given with ease by mouth than in any other way. In rectal administration of dextrose the amount absorbed when it is given in dilute solution is too small or uncertain, whereas concentrated solutions are irritating to the colon.

Intravenous instillation of dextrose, as shown by Simici, Popescu and Craifaleanu [40] is, from the point of view of an increase in hepatic glycogen, equally but not more efficacious than a similar oral dose. On the other hand, deposition of glycogen in the heart and the skeletal muscles is greater with the use of the intravenous route and may be advantageous in diseases of these organs. However, in diseases of the liver, intravenous administration of dextrose is to be preferred only when emesis or some other cause makes the oral route unavailable. In my opinion, this deserves emphasis because in many hospitals the intravenous instillation of 500 cc. of a 10 per cent solution of dextrose has become such an established routine for a variety of conditions that many interns and physicians have almost forgotten that dextrose can enter the body in any other way. The result is that patients receive 50 Gm. of dextrose a day by vein when they could have been given 300 Gm. by mouth with less discomfort.

Continuous intravenous infusion of dextrose solutions over a period of several days is a procedure that should not be undertaken lightly, owing to the necessity of dissecting a cubital vein for the cannula and the risk of air emboli. On the other hand, when the condition of the patient warrants it, this method of giving dextrose has important advantages. One of these is the continuous inflow of dextrose without undue strain on the organs of assimilation. Another advantage is the large amount of carbohydrate that can be administered in this fashion. According to Woodyatt, Sansum and Wilder,[41] a theoretical maximum of about 1.5 Kg. of dextrose can thus be given to the average person in twenty-four hours. Actually, Hendon [42] gave as much as 600 Gm. of dextrose in eighteen hours and as much as 500 Gm. daily for five successive days. This method of administration of dextrose, which answers the ideal requirements of therapy for cases of severe acute hepatic damage, such as acute yellow atrophy of the liver, has not been given an adequate clinical trial. However, Hendon mentions two patients with multiple abscesses of the liver who recovered following its use. Before removal of the intravenous cannula it is important to decrease the amount of inflowing sugar solution gradually, because otherwise insulin shock may occur. The explanation of the hypoglycemia following abrupt cessation of prolonged sugar administration is that the pancreas, after becoming geared to a certain output of insulin, requires time in order to adjust its activity to changed conditions.[43]

40. Simici, D.; Popescu, M., and Craifaleanu, A.: L'action du glucose commercial, administré comparativement par les voies digestive et intraveineuse, sur la teneur en glycogène du foie, du coeur et des muscles, C. rend. Soc. de biol. **106:** 112 (Jan. 23) 1931.
41. Woodyatt, R. T.; Sansum, W. D., and Wilder, R. M.: Prolonged Accurately Timed Intravenous Injections of Sugar, J. A. M. A. 65: 2067 (Dec. 11) 1915.
42. Hendon, G. A.: Experiences with Venoclysis, Ann. Surg. **91:** 753 (May) 1930.

SUMMARY

1. The presence of a certain amount of glycogen in the liver is essential for the proper functioning of this organ.

2. In diseases of the liver, insufficient gluconeogenesis causes "internal" carbohydrate starvation, which results in a reduction of hepatic glycogen, probably largely through depletion of that part of it which serves as a storage form of carbohydrate.

3. Both in experimental animals with hepatic damage and in patients with diseases of the liver, it is possible by administration of suitable amounts of dextrose to relieve the internal shortage of carbohydrate and, as a result of this, to bring about glycogen storage.

4. Dextrose therapy is indicated in all cases of primary and secondary hepatic disease.

5. Oral administration of dextrose is the method of choice unless contraindications are present.

Parnassus and Third avenues.

Clinical Notes, Suggestions and New Instruments

NEPHROPEXY BY MEANS OF A FASCIAL HAMMOCK

DAVID R. MELEN, M.D., ROCHESTER, N. Y.

Nephroptosis is one of the commonest diseases of mankind or, perhaps it would be better to say, womankind. Keyes,[1] in his table of frequency, quoting various authors, gives it as between 4 and 56 per cent for all women, and as between 0.5 and 4 per cent for men. A fair average would be about 10 per cent for women and 1 per cent for men. The condition is much commoner in women who weigh under 120 pounds (55 Kg.) than in women who are in excess of that weight.

Of the women who have nephroptosis, only one in ten has symptoms referable to it. As has been pointed out many times, nephroptosis is not part of a general visceroptosis. Deming [2] and Kelly [3] discuss and emphasize this point. Symptoms are classified under, first, nonsymptomatic nephroptosis; second, symptoms referable to the kidney region, such as discomfort, pressure or pain, in constant or recurrent attacks, and, third, gastric or neurasthenic symptoms.

It is not necessary or desirable to operate in all cases of nephroptosis. Operation should be limited to those cases in which there has been sufficient previous suffering to warrant it. This means that the diagnosis must be correct and that all other means of restoring the kidney to its proper site have been tried. This includes rest in bed, a weight-gaining regimen, fitted corsets or supports, and exercises designed to strengthen the abdominal muscles. A great deal devolves on the urologist as to the proper choice of patients who are suited for, or absolutely require, nephropexy.

43. Shaffer, P. A.: Personal communication to the author.
1. Keyes, E. L.: Urology Textbook, New York, D. Appleton & Co., 1923, p. 405.
2. Deming, C. L.: Nephroptosis: Causes, Relation to Other Viscera, and Correction by a New Method, J. A. M. A. **95:** 251 (July 26) 1930.
3. Kelly, H. A., and Burnam, C. F.: Diseases of Kidneys, Ureter and Bladder, New York, D. Appleton & Co. **1:** 459, 1915.

One who reviews the literature of the surgical methods used to anchor a loose kidney since Hahn [4] did the first one in 1881 will be amazed at the infinite variety and the ingenuity exhibited. Just to mention a few, cited by Deming,[2] Davis [5] tunneled underneath the kidney capsule with a bundle of quadratus muscle. Morris [6] turned back a wide flap of kidney capsule and sutured it to the upper angle of the wound. Ledón

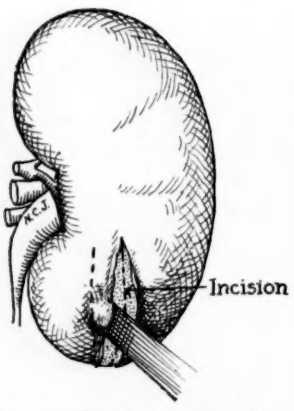

Fig. 1.—Elevating the edge of the capsular incision.

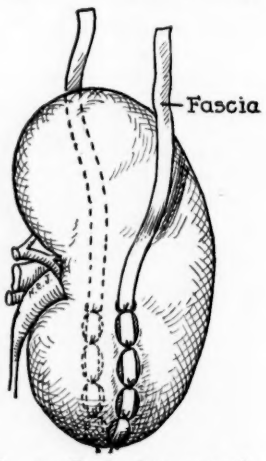

Fig. 2.—Fascia lata sutured into position.

Uribe [7] freed the last rib, and, after tunneling through under the capsule, suspended the kidney on the rib. Bell [8] urged the use of a tongue-like piece of renal fascia passed through the arcuate ligament and fastened with two silk sutures. Penick [9] used a strip of lumbar fascia by passing it around the lower pole, elongating it with chromic sutures, and fastening it upward to the diaphragm. Chambers [10] stripped back part of the true capsule at the upper pole and approximated this exposed surface against the muscles. He passed several strands of catgut around the kidney to hold this approximation snug, his idea being that the adhesions forming would anchor the kidney.

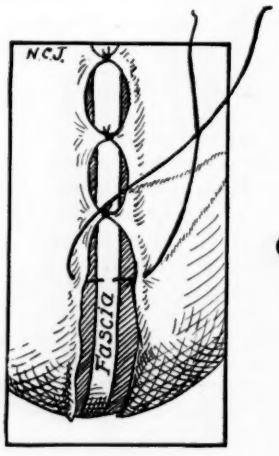

Fig. 3.—Detail of method of suturing the capsular edges and the fascia together.

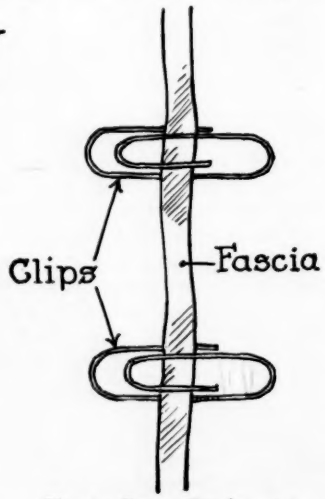

Fig. 4.—Paper clips in use to keep fascia from wrinkling.

O'Conor [11] stresses freeing the kidney and ureter of the surrounding fat and adhesions. He calls this nephrolysis and ureterolysis. He excises the fat and does not use it in his technic of nephropexy but incises the true capsule at the upper pole and then at the lower pole, stripping up the capsule to about the middle of the kidney. Here the capsule is sewed together into a band about 2 inches wide, and the kidney is suspended by suturing this band to the intercostal muscles between the eleventh and twelfth ribs. Foley [12] uses suspension sutures passed through the true capsule only, and not through kidney substance. The perirenal fat is not sutured for support.

Carl Beck [13] perforated the kidney near its lower pole by a large trocar. The margin of the spinalis dorsi muscle was incised, and a bunch of fibers, just large enough to pass through the renal buttonhole, mobilized. With forceps, this bandlike muscle flap was drawn through the renal hole made by the trocar. Then the end of the flap was fastened somewhat below its former muscular bed by sutures.

Deming's [2] technic consists of stripping off all the perirenal fat and separating all adhesions that may be holding the kidney and ureter. The kidney is pushed up into the chest as far as

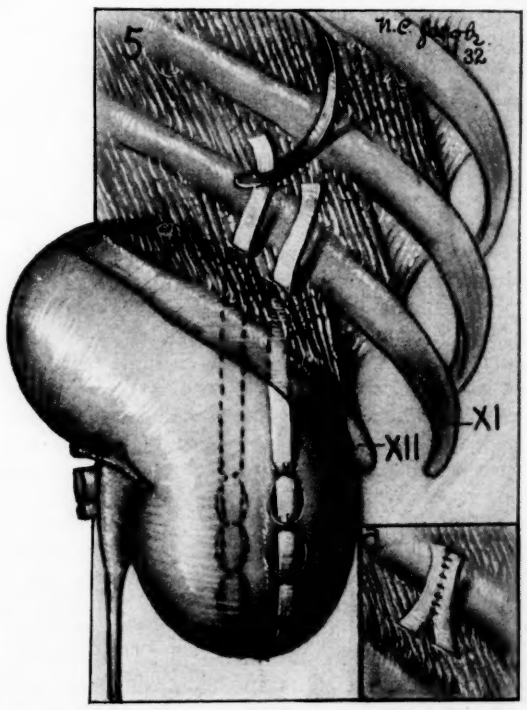

Fig. 5.—Free edges of fascia brought through intercostal muscles between twelfth and eleventh ribs. Inset (*a*), free ends of fascia sutured together with heavy silk.

possible, and the perirenal fat is then sutured to the quadratus lumborum muscle, thereby obliterating the space below the kidney. No sutures are passed through the true capsule or through the kidney substance.

Kelly's [13] method, which is perhaps the most popular of all, consists of passing chromic gut sutures through the true capsule to include a small bite of parenchyma. The free ends of the sutures are then passed through the quadratus lumborum muscle.

Davis [5] states that any one of the flap methods in which flaps have been fashioned from the true capsule and sewed to the musculature is apt to result in failure, as the flap tissue becomes stretched as time goes on, and the kidney again becomes low. I am therefore presenting a method of nephropexy which is easy and positive. The technic is obvious from a study of the accompanying illustrations and the description in the report of the case. The prepared fascia lata is now being put up in glass tubes by catgut manufacturers.

4. Hahn, Eugen.: Nephropexy, Centralbl. f. Chir. **8:** 449-452, 1881.
5. Davis, B. B.: A New Method of Anchoring the Kidney, J. A. M. A. **38:** 1208 (May 10) 1902.
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11. O'Conor, V. J.: Nephrolysis, Ureterolysis and Nephropexy, Arch. Surg. **18:** 1263-1272 (April) 1929.
12. Foley, F. E. B.: Improved Methods for Nephropexy, and for Exposure of the Kidney, Arch. Surg. **18:** 1413 (April) 1929.
13. Beck, Carl: On a New Principle in Nephropexy, New York, M. J., Dec. 7, 1901.

REPORT OF CASE

Mrs. A. N., aged 32, a housewife, referred by Dr. Carl Ottley of Charlotte, N. Y., had had almost constant pain in the right kidney region, anteriorly and posteriorly, for a period of twelve years. Many times the pain became so severe that she had to go to bed. The pain usually began in the back and radiated to the right flank and to the right lower quadrant, anteriorly, as far as the bladder. When the attacks of pain were more severe than usual, there would be considerable belching of gas, and occasional nausea and vomiting.

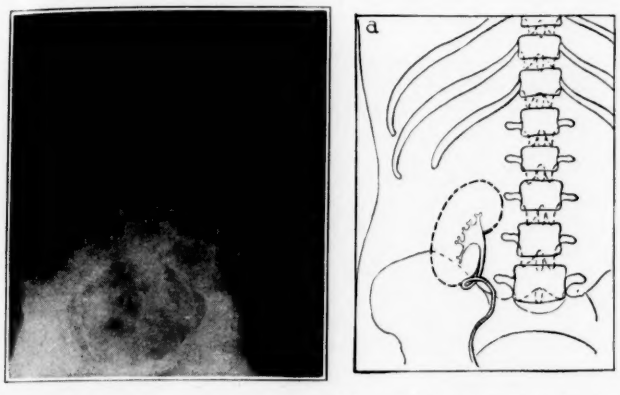


Fig. 6.—Pyelogram, in standing position, before operation, showing kidney low, and ureter so redundant that it loops on itself. *a*, diagrammatic tracing of pyelogram.

On physical examination the right kidney was easily palpable and freely movable. Complete laboratory studies were all normal with the exception of a few pus cells in the urine, on repeated examination.

Cystoscopy and pyelography in the standing position showed the right kidney markedly ptosed, the lower pole being below the shadow of the crest of the ilium, and the ureter so redundant that there was loop formation.

Operation was done under spinal anesthesia. A right lumbar incision was made 6 inches long from the costovertebral angle 1 inch below the last rib and parallel to it. The kidney was normal in size, shape and consistency. It was very loose and

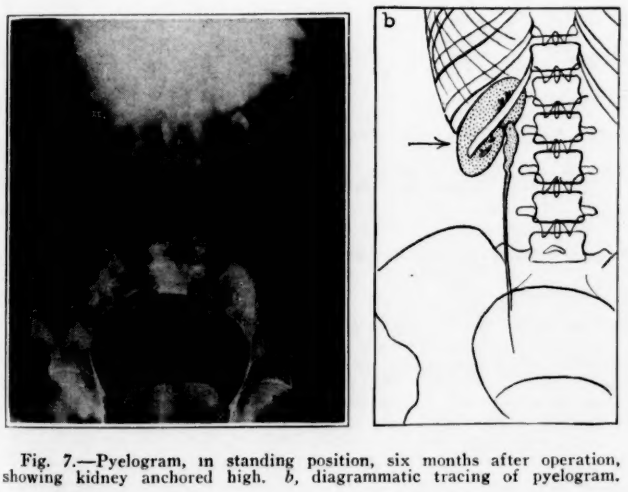


Fig. 7.—Pyelogram, in standing position, six months after operation, showing kidney anchored high. *b*, diagrammatic tracing of pyelogram.

freely movable. It was found rotated on its long axis 180 degrees. The fatty capsule was stripped thoroughly from the kidney and renal pelvis, beginning at the upper pole, and the mass of fat was kept intact purposely (not fragmented). The ureter was isolated and freed for 8 inches, down to its entrance into the bony pelvis, as suggested by O'Conor.[11]

No stones were palpated; there were no aberrant vessels or adhesions.

The true capsule at the lower pole only was split in the sagittal plane, care being taken not to cut into the parenchyma. The edges of this incision were carefully raised from the parenchyma, and a piece of "prepared fascia lata," three-eighths inch wide by 9 inches long, was inserted between the lips of this capsular incision, and the fascia sewed into position with number 1 chromic gut in a nontraumatic needle.

The kidney was then pushed up under the diaphragm, obliquely, so that the upper pole pointed medially toward the spinal column. This was done to give better drainage to the inferior calix. The two free ends of the fascia were then threaded on Gallie needles and passed through the intercostal muscle, between the twelfth and eleventh ribs, and sutured together with heavy silk.

The fatty capsule, which had been kept intact purposely when it was stripped from the kidney, was sewed across to the quadratus lumborum muscle, after the method of Deming.[2] A small rubber tube one-eighth inch wide was inserted down to this fatty layer for drainage. Closure of the wound was done in layers.

The patient made a rapid and uneventful recovery; the wound healed by primary intention. She was out of bed on the sixteenth day and discharged on the nineteenth day. During the nine months that has elapsed since the operation she has had none of her previous attacks of pain or nausea.

A pyelogram six months after operation, taken in the standing position, shows the kidney anchored high.

35 Chestnut Street.

A FOREIGN BODY IN THE VAGINA OF A FOUR YEAR OLD CHILD, WITH RESULTANT MASSIVE HEMORRHAGE

SATER NIXON, M.D., INDIANAPOLIS

The presence of a foreign body in the vagina of a child, aged 4 years, with a practically imperforate hymen, is in itself a rare occurrence, and the resulting massive hemorrhage creates additional interest.

A search of indexed literature, terminating with the third quarter of the *Quarterly Cumulative Index Medicus* for 1932, revealed that only a few cases, occurring from infancy to the age of 11 years, have been reported in this and foreign countries. Seven of these were cited by Offergold in his report in 1930. Of the twenty-two reports published, only eight cases occurred in children of 5 years or younger, and in one case the age was not mentioned.

R. R., a girl, aged 4 years and 9 months, was referred for surgical attention, July 8, 1932, because of a recent massive vaginal hemorrhage, preceded by vaginal discharge and slight hemorrhages; nervousness, manifested by irritability and restlessness, and loss in weight. The family history was obscure, since the early months of the patient's life had been spent in a large Eastern orphanage. The child, whose birth was at full term, had received meticulous care in the home of foster parents since the age of 1 year. She had been unusually well: the only illness had been whooping cough at 2 years of age, with good recovery. She appeared to be perfectly normal, except for the fact that since being in the present home she had persistently slept in the "knee-chest" position.

The complaint antedated April, 1932, when the mother noticed staining of the child's undergarments, apparently by purulent material from the vagina. A pediatrician advised the application of antiseptic solutions to the external genitalia and abstinence from play in a sand pile, which he felt might be the source of the difficulty. The offensive discharge continued in increasing amounts, with at times slight hemorrhages; the child began to lose weight appreciably. One week before examination she suffered rather a copious vaginal hemorrhage, which lasted only a few minutes, with recurrence six days later (July 7). At that time the hemorrhage was severe, saturating her clothing, bed linens and mattress.

On examination the child appeared somewhat anemic but of normal age-developmental ratio, and the skin was free of lesions. There were apparently neither congenital nor acquired deformities of the bony or soft tissue structures of the body. The hair of the head was abundant and of normal silky texture. The pulse, temperature and blood pressure were normal. The results of the general examination, in which special attention

Read before the Indianapolis Medical Society, Nov. 1, 1932.

was directed to the development of the mammae, adenopathy, discernible tumors of the abdomen, and enlargement of the liver and spleen, were essentially negative. Local pelvic examination showed neither abnormal nor premature development of the external genitalia. The vulva and adjacent cutaneous tissues were apparently free of acute or chronic inflammation but were bathed in a bright red, foul smelling discharge. The hymen was imperforate except for a minute opening of about 2 mm. near the upper segment, through which the sanguino-

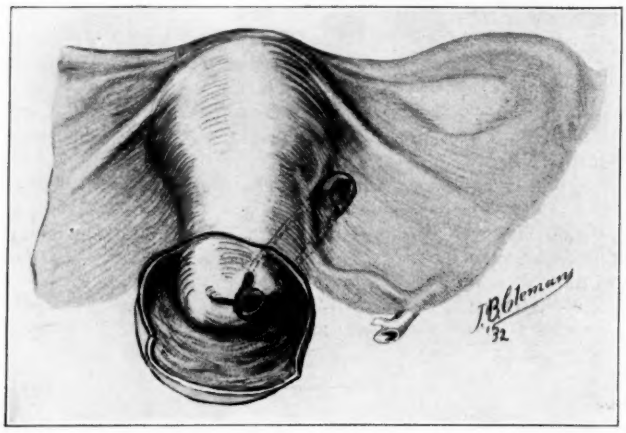


Fig. 1.—Location of safety pin.

purulent material egurgitated. Rectal examination revealed no abnormalities excepting hypersensitivity of the anterior rectal wall. A bimanual recto-abdominal examination was unsatisfactory because of the irritability of the child.

The blood counts were within normal limits; the red cells were uniform in size, shape and staining properties, with a normal coagulation and bleeding time; hemoglobin was 70 per cent. A negative blood Wassermann test, taken prior to adoption, was reported by the foster parent. The bacteriologic examination of the discharge showed nothing more than the usual pus-producing organisms and a few suggestive gram-negative diplococci, but the bacteriologist would not make a positive or a negative diagnosis of gonorrheal vaginitis without further study. The urinalysis of a noncatheterized specimen was negative except for the expected leukocytes, erythrocytes and squamous epithelial cells. Catheterization and collection of blood for another Wassermann test were deferred to a more propitious time.

In a summary of the results, neoplasms of the genital tract appeared to be the most probable causative factors. In the differential diagnosis, ovarian tumors, either benign or malignant, were tentatively eliminated, since in children they are commonly associated with somatic and menstrual precocity and with an easily palpable abdominal tumor. Benign tumors of the infant uterus rarely if ever occur; therefore this possibility evoked no interest. An occasional cause of vaginal hemorrhage and foul smelling discharge in children is the benign, sloughing vaginal tumor—the vaginal polyp. However, Abt writes: "Almost all tumors of the uterus and vagina in children are malignant and since these tumors of the pelvic organs develop with extreme rapidity in infancy and childhood although the general health may not be noticeably influenced until the disease is well advanced, with hemorrhage the only symptom, the subject is of grave importance." Therefore a "working diagnosis," thought adequate to account for all the symptoms, was malignant or benign tumor of the vagina, or a malignant condition of the uterus.

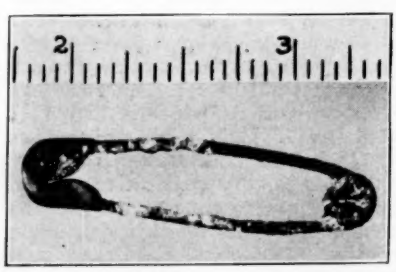


Fig. 2.—Appearance of safety pin after removal.

Under gas anesthesia at St. Vincent's Hospital, July 9, the hymen was ruptured and the vagina dilated. During the course of this diagnostic procedure, a closed, greatly encrusted safety pin, measuring 4.8 cm. by 1.1 cm., was found to have penetrated the tissues of the anterolateral portion of the cervix near the fornix of the left side. The object pointed upward, forward and outward, two thirds of it being buried in the vaginal and interstitial portion of the cervix and the parametrial tissues in the base and lower part of the broad ligament. Necrosis of the surrounding tissues, including probably branches of the uterine artery, was the result. The pin was removed and the child made an uneventful recovery, leaving the hospital on the third day.

List of Collected Cases

Author	Journal	Age of Child	Object
Cases Cited by H. Offergold			
Offergold, H....	Monatschr. f. Kinderh. **44**: 29, 1930	2 yrs. 9 mo.	Metal container, containing crystals of potassium permanganate
Horn.....	Zentralbl. f. Gynäk. **52**: 700, 1928	5 yrs.	Empty shell, 3 cm. by 8 mm.
Hohne.....	Zentralbl. f. Gynäk., 1928	4½ yrs.	Hairpin introduced 1 year before
Gronarz.....	Deutsche med. Wchnschr. **36**: 2025, 1910	3 yrs.	Stick introduced by attacker
Fabre.....	Gaz. méd. de Paris **1**: 148, 1897	4 yrs.	Hairpin 6 cm. long
Dietrich.....	Zentralbl. f. Gynäk. **52**: 700, 1928	6 yrs.	Ear of grain, discharge for 1 year
Natanson, K...	Wien. klin. Wchnschr. **21**: 635, 1908	8 yrs.	Button
Additional Cases			
Morestin, H....	Bull. et mém. Soc. anat. de Paris **74**: 885, 1899	3 yrs.	Pin 5 cm. long with a head the size of a pea
Stoeber, T.....	Monatschr. f. Kinderh., 1926	2½ yrs.	Two cherry stones, two pebbles, two splinters of wood and other foreign bodies, including a number of scraps of coal
Rajagopalan, R. K.	Indian M. Gaz. **63**: 201, 1928	9 mos.	Paddy grain
Welt-Kakels, Sara	Arch. Pediat. **18**: 933, 1901	Not given	Safety pin
Gilde-Ostachoviene	Medicina, Kaunas **8**: 116, 1932	7 yrs.	Unable to learn the object found
Pilot, I.....	Am. J. Obst. & Gynec. **18**: 824, 1929	9 yrs.	Hairpin
Rouvier, J.....	Ann. de gynéc. **28**: 283, 1887	7 yrs.	Shell of hazelnut
Marcus, E.....	Wien. klin. Wchnschr. **25**: 544, 1912	6 yrs.	Hairpin
Ebeler.....	München. med. Wchnschr. **64**: 1244, 1917	11 yrs.	Cork
Moore, A.....	Memphis M. Month. **24**: 251, 1904	6 yrs.	Wad of brown paper
Le Clerc.....	Bull. et mém. Soc. nat. de chir. **24**: 15, 1928	6½ yrs.	Foreign body composed entirely of calcium oxalate, 6 cm. long and weighing 25 Gm.
Rosmarin, H...	Dermat. Wchnschr. **91**: 983, 1930	6 yrs.	Forked branch of cherry
Lorini, A.....	Arte ostet. **19**: 205 1905	8 yrs.	Piece of straw rolled up
Krause, P.....	Berl. klin. Wchnschr. **33**: 839, 1896	6 yrs.	Hairpin in vagina for two years
Chauvin and Garriques	Montpellier méd. **41**: 211, 1919-1920	8 yrs.	Leech

An interesting notation was made in the follow-up record, October 15, to the effect that the normal prone position during sleep was adopted a few days subsequent to removal of the foreign body. Therefore, it is perfectly logical to assume that the mechanical presence of the object in the vagina was responsible for the "knee-chest" position and would suggest the importance of direct interrogation regarding this point in eliciting the history in cases presenting similar symptoms.

Presumably this foreign body had entered the vagina during the time spent in the institution, almost four years before, because of the length of time of the peculiar position assumed during sleep, the pronounced encrustation of the object, the extreme degree of cicatricial encystment, and the contraction with practical closure of the introitus.

902 Medical Arts Building.

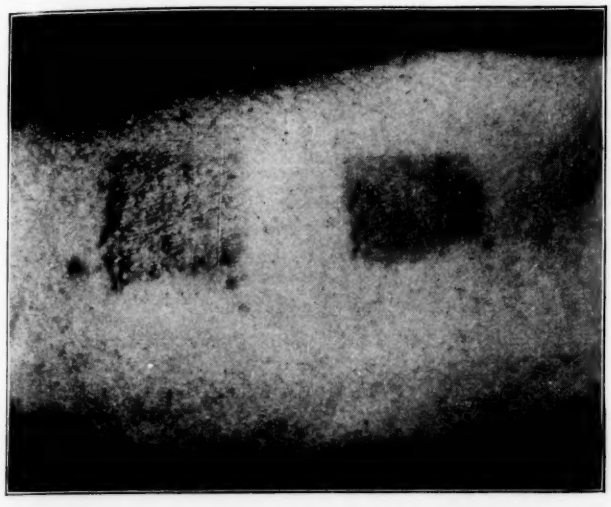
DERMATITIS DUE TO NUPERCAINE

RICHARD W. FOWLKES, M.D., RICHMOND, VA.

In a fairly extensive search of the literature I have not found any reference to a severe localized and mild generalized dermatitis due to local applications of nupercaine.

REPORT OF CASE

J. E. T., a man, aged 37, was first given a 1 per cent nupercaine ointment eighteen months before the present attack of dermatitis. At that time a few hemorrhoidal tags were removed by a proctologist, and the ointment was given to relieve pain



Toward the left is the reaction following a patch test with 1 per cent aqueous nupercaine solution. The other reaction is from 1 per cent nupercaine in hydrous wool fat.

and a mild pruritus with complete success and without causing any irritation. Six months ago the patient again noticed some pruritus and, without consulting the proctologist, used nupercaine ointment for relief. Within a few days the local inflammation had increased considerably, and burning and itching had developed in addition to the original pruritus. Of his own accord he discontinued the nupercaine ointment, substituting phenolated petrolatum. Within a week he was well.

The patient was seen by me, Dec. 24, 1932. Ten days prior to this he consulted his proctologist for a small lump in the intergluteal fold. This was diagnosed as a sebaceous cyst, which was excised, and the patient again used his nupercaine ointment to relieve some slight local pain. He gradually developed, within a week, a severe dermatitis, and when seen, December 24, the patient was suffering intensely. He presented a severe vesicular and bullous eruption in the intergluteal fold which extended well outward on the buttocks. The perineum, scrotum and penis were extremely erythematous and swollen, with the erythema extending down the inner side of both thighs. Accompanying this eruption was an intensely painful burning, stinging and itching, also there was a severe generalized pruritus over the entire body, with a papular and macular rash on the arms and trunk.

The patient was put to bed and continuous wet dressings of saturated boric acid solution were applied. Sedatives were required, as he had had no sleep for several nights. The patient was forced to remain in bed a few days but recovered almost entirely within a week both from the local dermatitis and from the generalized eruption and pruritus.

A contact test, in which the original nupercaine ointment was used, was applied to the patient's forearm, and after twelve hours this was removed because of stinging and itching. The area was erythematous and presented one or two small vesicles. Since the ointment was made by a local druggist, and a hydrous wool fat base was used, a contact test was made on the other forearm, pure hydrous wool fat being used. Also, another patch test was applied, a fresh 1 per cent aqueous solution of nupercaine being used. The hydrous wool fat test was negative after twenty-four hours and remained so, but the aqueous nupercaine test had to be removed after ten hours on account of the local reaction. The area was erythematous and slightly swollen, and when seen the following day it was vesicular in character, simulating completely the local eruption about the buttocks.

Passive transfer tests were made, but they were negative. This, however, was expected, since Coca[1] has shown that in contact dermatitis the human skin cannot be passively sensitized with the serum of a sensitive person.

404 Professional Building.

ARGENTAFFIN TUMOR (CARCINOID) OF THE RECTAL COLON

ALEXANDER BRUNSCHWIG, M.D., CHICAGO

Carcinoid tumors of the appendix and small intestine have been repeatedly described in the literature.[1] It is generally conceded that these neoplasms arise from the so-called argentaffin cells present in the mucosa.[2] Argentaffin cells are also normally present in the stomach and colon.[3] As the name implies, these cells, and the carcinoids derived from them, contain cytoplasmic granules capable of reducing ammoniacal silver solutions. This is the cardinal differentiation between true carcinomas and carcinoid tumors.

A review of the literature failed to disclose reports of carcinoid tumors in the stomach. Two cases of carcinoid tumor

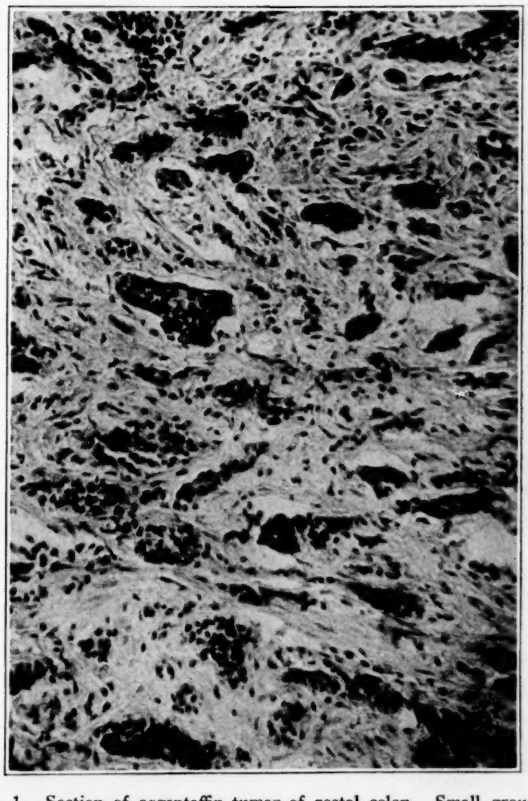


Fig. 1.—Section of argentaffin tumor of rectal colon. Small groups of tumor cells in dense stroma. Hematoxylin-eosin stain. Reduced from a photomicrograph with a magnification of 200 diameters.

of the colon were reported by Saltikow:[4] one in the sigmoid and one in the anterior wall of the rectal colon. These were

1. Coca, A. F.; Walker, Matthew, and Thommen, Augusta: Asthma and Hay Fever in Theory and Practice, Springfield, Ill., Charles C. Thomas, 1931.

From the Department of Surgery, University of Chicago.

1. Oberndorfer, in Lubarsch and Henke's Handbuch. **4,** part 3, pp. 814 and 840. Forbus, W. D.: Argentaffine Tumors of the Appendix and Small Intestine, Bull. Johns Hopkins Hosp. **37:** 130 (Aug.) 1925.
2. Masson: Appendicite remogéne et carcinoides, Ann. d'anat. path. **1:** 1, 1924.
3. Pessin, S. B.: The Enterochromo-Argentaffin Cells, Arch. Path. **11:** 171 (Feb.) 1931.
4. Saltikow: Ueber die Genese der Karzinoiden Tumoren u. s. w., Beitr. z. path. Anat. u. z. allg. Path. **54:** 559, 1912.

reported before the argentaffin nature of carcinoid tumor cells was recognized (Gosset and Masson[2]); and although Saltikow's illustrations strongly suggest the carcinoid nature of the neoplasms, their final classification as such cannot be made in the absence of silver impregnation to demonstrate the argentaffin cytoplasmic granules.

The following reported case is an instance of true argentaffin tumor in the (rectal) colon:

A man, aged 63, was admitted to the University of Chicago Clinics for general physical examination, which proved to be negative except for a small, hard, rounded, movable nodule 0.5 cm. in diameter beneath the mucosa of the anterior wall of the rectum approximately 8 cm. above the mucocutaneous junction. At proctoscopic examination the mucosa appeared normal over it. Under local anesthesia the tumor and overlying mucosa were removed. It did not shell out but was dissected from the adjacent submucosa, to which it was only loosely adherent.

After formaldehyde fixation, the tissue was embedded in paraffin, sectioned, and stained by Harris's hematoxylin and eosin. Other sections were impregnated in Fontana's silver nitrate solution and treated according to the technic described by Masson to demonstrate argentaffin granules and counterstained with ponceau-red-acid fuchsin-aniline blue. (The staining was done by Dr. P. A. Delaney.)

Fig. 2.—Group of argentaffin tumor cells, showing dense collection of argentaffin granules (black staining) in some of the cells. Reduced from a photomicrograph with a magnification of 3,000 diameters.

The hematoxylin-eosin sections showed a segment of normal colon mucosa overlying rather dense fibrous tissue, throughout which were scattered small, irregular groups and nests of closely packed rounded or polyhedral tumor cells containing oval nuclei with finely stippled chromatin and one or more nucleoli. The cytoplasm of these cells was granular and eosinophilic. Within some of the larger cell masses there was a suggestion of alveolar formation. The septums between the groups of neoplastic cells contained smooth muscle fibers derived from the muscularis mucosae, as well as fibrous tissue. Within these septums were also tumor cells occurring singly or in groups of from two to five cells.

Sections after silver impregnation showed the cytoplasm of many of the tumor cells crowded with black or dark black-brown staining granules (reduced silver). An occasional normal argentaffin cell (cell of Kultschitzsky) was also seen among the mucous cells of the colon mucosa.

The diagnosis was argentaffin or carcinoid tumor of the rectal colon.

COMMENT

Oberndorfer,[5] the first to separate carcinoid tumors of the small intestine from true carcinoma, believed that they were invariably benign. Subsequent study, however, has shown that they may become malignant, as evidenced by regional and distant metastases. For example, of 104 instances of carcinoid tumor of the small bowel reviewed by Cooke,[6] 21 were malignant. Cases of malignant argentaffin tumors of the appendix have been collected from the literature by Lubarsch and Hanke.

Argentaffin tumors of the colon are no doubt much more common than the literature indicates. They must be considered in the differential diagnosis of epithelial tumors of the colon.

5. Oberndorfer: Karzenoide Tumoren des Dünndarms, Frankfurt. Ztschr. f. Path. **1**: 426, 1907.

6. Cooke, H. H.: Carcinoid Tumors of the Small Intestines, Arch. Surg. **22**: 568 (April) 1931.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

PAUL NICHOLAS LEECH, Secretary.

LUMODRIN NOT ACCEPTABLE FOR N. N. R.

Lumodrin is a preparation in tablet form manufactured by the Winthrop Chemical Co., Inc., and proposed for the treatment of cough. It is said to contain in each tablet Ephedrine Hydrochloride ⅜ gr., Luminal ¼ gr., and Pyramidon 2 gr.; recommended in a dosage of 1 or 2 tablets three or four times a day for adults, and for children above five years, ½ to 1 tablet. In an advertising circular (which also contains reference to Oscodal and Pyramidon—thus lending the prestige of accepted products to the promotion of an unaccepted one) the following claims are made:

"Each of the constituents of Lumodrin contributes to its beneficial action in diseases of the respiratory tract: Luminal, by allaying irritation of the mucous membrane; ephedrine, by relaxing spasmodic contraction of the musculature; Pyramidon, by exerting an antispasmodic and analgesic effect and also by reducing fever in acute cases.

"Because of its combined actions in reducing congestion, allaying irritations and controlling bronchial spasm, Lumodrin relieves cough, oppressed breathing, chest pains and general discomfort. Its administration is also followed by a mild reduction of the temperature in febrile cases of colds and influenza."

In another circular it is claimed that:

"In acute bronchitis, Lumodrin reduces the congestion of the mucous membrane . . ."

". . . ephedrine promptly abolishes the difficulty in breathing [in asthma]. When supplemented by Luminal, as in Lumodrin, the relief of bronchospasm is materially prolonged, while nervous disturbances accompanying the asthmatic paroxysms rapidly subside. The results obtained with Lumodrin in hay fever associated with bronchial spasm have also been satisfactory." "In pertussis Lumodrin will be found a serviceable preparation. Good results are to be expected particularly in the milder forms [sic!] and in the second stage." "Lumodrin also exerts a beneficial action in acute and chronic laryngitis by reducing congestion, allaying irritation and eliminating the spasmodic element."

The name "Lumodrin" conveys no information as to the active components of the preparation; although these are stated on the reproduction of the label printed in one circular, and constitute two Council-accepted products (Luminal and Pyramidon) and one unaccepted product (ephedrine hydrochloride-Winthrop). As is the case with the similar mixtures, "Allonal" (J. A. M. A. **86**:1853 [June 12] 1926), and "Peralga" (J. A. M. A. **80**:942 [March 31] 1923), Lumodrin conflicts with the Council's requirement that pharmaceutic preparations and mixtures "be so named as to remind the prescriber constantly of their potent ingredients."

The rationale of the combination of these three ingredients in a cough mixture is not apparent. In the case of another cough mixture containing ephedrine (Ephedrol), the Council

held that there was no satisfactory evidence for its inclusion in preparations of this type (J. A. M. A. **94**:634 [March 1] 1930), and that its use therein was based seemingly on an attempt to take commercial advantage of the rec pularization of ephedrine. Lumodrin appears to be a c n point. The Council has also held that, as "barbital is e eted (or eliminated) more slowly than amidopyrine and it is r essary to give too much of the hypnotic in order to give eno h of the amidopyrine when a mixture of these two is administ red more than once to a patient," the repeated administrat on of a barbiturate and amidopyrine in fixed proportion is therefore irrational.

According to the recommended dosage, a patient might receive in one day: *3 grains* of ephedrine hydrochloride, *2 grains* of phenobarbital and *16 grains* of amidopyrine. A child might receive up to one-half this dosage. Where this is repeated for several days, as well it might be in whooping cough, for instance, untoward effects might occur frequently, owing to excessive dosage of one or all of these substances.

With regard to the claims made for Lumodrin, so far as the Council knows, no evidence exists: that Luminal allays irritation of mucous membranes; that spasmodic contraction of the bronchiolar musculature (requiring ephedrine or similar preparations for relief) occurs in cough other than in asthma and possibly in pertussis; that amidopyrine is an "antispasmodic"; or that any of the components of Lumodrin, separately or together, would relieve the congestion of the bronchial mucous membrane in bronchitis.

In view of these considerations, and as the Council had already taken a definite stand with regard to similar preparations (Ephedrol, Allonal, Peralga) the Council decided that Lumodrin is not acceptable for inclusion in New and Nonofficial Remedies because it is an unscientific mixture containing an excessive number of active ingredients (rule 10); and because it is marketed with unwarranted and extravagant therapeutic claims (rule 6), under an uninforming and misleading name (rule 8).

OMNADIN NOT ACCEPTABLE FOR N. N. R.

Omnadin (Prolipin) is a preparation manufactured by H. A. Metz Laboratories, Inc., recommended for use as nonspecific lipoprotein therapy practically as a cure-all.

In an advertising circular it is stated to be ". . . a sterile solution, composed of protein substances obtained from nonpathogenic bacteria (sarcina and B. mycoides), various animal fats and lipoids derived from bile." In another circular it is said to be ". . . a combination of proteins and lipoids originated by Professor Much." No more specific statement of composition could be found in the advertising literature.

Omnadin is stated by Freedman [1] to be a ". . . compound sarcine vaccine composed of various neutral animal fats and bile lipoids, as well as reactive substances derived from metabolic products of nonpathogenic schizomycetes. . . . It . . . combines the basal elements of all those antigens which play an immunizing part in infectious processes."

Schnapek [2] states that Omnadin is a mixture of metabolic products from nonpathogenic fungi, lipoids from bile, and neutral animal fats. The latter is essentially the description given in Gehe's Codex.

It is apparent that Omnadin is a semisecret preparation marketed under an uninformative name. The following are some of the claims made for this product:

"Omnadin exerts a prompt and favorable reaction upon the entire system . . . Its administration in acute infections is followed by a typical rapid fall in temperature . . . The disease is often aborted . . . complications are frequently prevented. . . . A definite advantage of Omnadin is its freedom from anaphylactic or other unpleasant by-effects. . . . It can be repeatedly given without risk of injurious effects."

"The reaction brought about by Omnadin is in marked contrast to the violent symptoms which characterize 'protein shock'. This is by no means to be regarded as a sign of inefficiency; on the contrary, it represents a distinct advantage over the older method. The action of Omnadin is exerted directly against the cause of the pathologic process . . . As the natural course of the disease is not masked by 'shock' symptoms, the true response of the body to non-specific therapy can be determined more accurately. . . ."

"The chief conditions in which Omnadin has proved of value comprise influenza, pneumonia, erysipelas, scarlatina, measles, pertussis, typhoid fever, puerperal sepsis, surgical sepsis, arthritis, gonorrhea, eye infections, tonsillitis and otitis . . . colds . . . gastric and duodenal ulcer . . . [This list comprises only a portion of all the conditions for which it is recommended.] *It can also be used advantageously for activating specific vaccine therapy*" [italics ours]. . . . It is extremely well borne by adults, children and even infants."

"Omnadin is administered intramuscularly as early as possible. The average single dose for children is 1 to 2 cc., and for adults 2 cc. One injection daily is usually sufficient but it may be repeated, if necessary, without intolerance or local irritation."

It is claimed in the advertising circulars that this preparation was originated by Much on the basis of his work on lipoprotein immunity. Much's original work has been confirmed and extended by others,[3] and it now seems fairly well established that the admixture of protein in lipoids will, in certain cases in animals, incite the production of antibodies to certain lipoids. According to Wells,[4] the lipoids are not of themselves antigenic but they modify the specificity of the antigens to which they are united. Much [5] has claimed that a mixture of protein, lipoid and neutral fat produces more antibodies than any one of these individually, or all separately, and that the immune reaction so produced resembles the natural defense mechanism of the body. This thesis has not been accorded general acceptance by other workers in this field. Certainly the applicability of this principle to the treatment of specific disease processes in the human being has not been established.

The Council's referee has reviewed the fairly extensive clinical literature on Omnadin of the past several years, practically all of which emanates from foreign sources. Without exception, the reports are uncritical and the observations uncontrolled.

The composition of Omnadin, as it is stated, is obviously highly arbitrary. Apparently the "protein" is derived from several different micro-organisms; the rationale of the choice of the particular varieties indicated is certainly not apparent; nor is evidence furnished that the "metabolic products" of the micro-organisms are really proteins. Just what lipoids are extracted from bile for this mixture cannot be ascertained from the literature, and the composition of the neutral fat mixture is equally shrouded in uncertainty. Needless to say, the product, as claimed, is an unnecessarily complex mixture.

If the complete absence of allergic reactions claimed for this preparation in both advertising material and literature is true, it would appear that Omnadin contains little, if any, antigenic material. With those preparations of definite high antigenic potency (Bacillus typhosus vaccine, for instance), reactions are known to occur in a certain percentage of, if not in all, individuals treated. If Omnadin is as safe as it is claimed to be, either it represents an epoch-making advance in medicine, or it is practically useless as an immunizing agent.

There is no reliable evidence that Omnadin involves any advance in nonspecific immune therapy. The Council believes that it must be classed as a dangerous preparation: If it contains antigenic material, claims of complete safety in its therapeutic use must be considered reprehensible; even if it has only a trace of antigen, it may yet cause allergic reactions; and if it is devoid of antigenic potency, its use is unwarranted and may carry a hazard in the neglect of more effective remedies.

In the past months the Metz Laboratories have carried on an active advertising campaign for Omnadin among physicians in this country. It does no credit to this firm that it should so assiduously promote a preparation in which the shotgun tactics of irrational therapeutics are clothed with a similitude of modern science; not to mention the utter disregard for the public welfare involved in the extravagant claims and the other features which constitute infraction of the Council's rules.

The Council declared Omnadin (Prolipin) unacceptable for inclusion in N. N. R. because it is an unscientific preparation of semisecret composition (rules 1, 2 and 10), marketed with unwarranted and extravagant therapeutic claims (rule 6) under an uninformative name (rule 8).

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1. Freedman, T.: S. African M. J. **6**: 301 (May 14) 1932.
2. Schnapek, F.: Wien. klin. Wchnschr. **43**: 430 (April 3) 1930.
3. Landsteiner and Simms; Sachs and Klopstock; cited from H. Gideon Wells in Jordan and Falk: Newer Knowledge of Bacteriology and Immunology, Chicago, 1928, chapter 50. Organ-Specific Lipoids, editorial, J. A. M. A. **97**: 1628 (Nov. 28) 1931.
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5. Much, H.: München. med. Wchnschr. **72**: 2089 (Dec. 4) 1925.

Committee on Foods

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

BOVRIL

Extract of Meat and Plant

Manufacturer.—Bovril, Ltd., London, England.

Distributor.—Bovril of America, Inc., Camden, N. J.

Description.—A viscous mixture of beef extract, hydrolyzed beef protein, yeast extract, beef powder, salt, extracts of cayenne, white peppers and celery seed, and caramel.

Manufacture.—Beef extract ingredient: Fresh beef muscle and trimmings from healthy cattle passed by government inspectors in the company's plants in Argentina are extracted with hot water; the extract solution is concentrated in "vacuum" and further concentrated to desired consistency at normal pressure. Analytic control is exercised throughout all stages of the manufacture. The extract is packed in tin plate containers and shipped to London, England.

Beef powder ingredient: Fresh beef muscle is trimmed of fat, minced by machine, and slowly dried in shallow steam heated evaporating pans equipped with rotating stirrers and maintained at a low temperature. The resulting coarse powder containing less than 5 per cent moisture and fat is immediately packed in hermetically sealed tins for shipment to London, where it is ground in granite roller mills to pass through fine mesh sieves.

Hydrolyzed beef protein ingredient: Residual meat after extraction in the preparation of the beef extract is rapidly dried in rotary driers and packed in hermetically sealed tins for shipment to London, where the dried beef meal is digested in glass lined pans with a dilute solution of hydrochloric acid for a definite time; it is neutralized with sodium carbonate, filtered and used without further treatment. All operations are under strict laboratory control.

Plant extract ingredient: Fresh brewers' yeast is autolyzed by its natural enzymes acting at a low temperature; the nitrogenous bodies thereby are rendered soluble. The autolyzed material is extracted with hot water; the solution is filtered and concentrated in "vacuum." The operations are carried out under conditions protective of the vitamins B and G content.

The previously indicated ingredients are heated to below 75 C. and mixed in definite proportions in steam heated pans. The hot fluid is sieved through wire cloth of fine mesh and automatically packed into clean new bottles. The product keeps in good condition almost indefinitely.

The company's factory at Santa Elena, Entre Rios, Argentine Republic, where the beef extract powder and meal are prepared, is an excellently equipped and hygienic food factory. Strict control is exercised over every stage of manufacture. All cattle are individually examined by a government inspector before being passed for the factory. The final processes of the manufacture of Bovril are carried out in London, England, under up-to-date hygienic conditions and scientific control and are subject to regular government inspections.

Analysis (submitted by manufacturer).—

	per cent
Moisture	39.1
Ash	18.5
Sodium chloride (NaCl)	13.6
Total nitrogen	6.2
Nitrogenous substances estimated as protein (N × 6.25)*.	38.8
Insoluble nitrogen	1.2
Creatin	1.4
Fat (ether extract)	0.2
Carbohydrates (by difference)	3.4

* The nitrogen determined includes that of ammonium salts, purine and pyrimidine bases, mono and diamino acids and proteins.

Calories.—1.7 per gram; 48 per ounce.

Claims of Manufacturer.—For the preparation of bouillon, for seasoning and flavoring gravies, soups, stews, sauces and other table dishes and for the diet of the sick.

ALERDEX-PROTEIN-FREE MALTOSE AND DEXTRINS

Manufacturer.—S. M. A. Corporation, Cleveland.

Description.—Essentially maltose and dextrins prepared by the proteolytic and diastatic hydrolysis of noncereal starch; free of protein coagulable by ordinary protein precipitation reagents; a spray dried nonhygroscopic powder.

Manufacture.—An infusion of malt of known proteolytic and diastatic activity is admixed with a suspension of noncereal starch in water. The temperature and p_H of the mixture are carefully controlled to permit hydrolysis of the protein to nonprotein substances. The action is continued until tests on the filtered solution show the absence of proteins precipitable by the ordinary protein reagents. Pepsin or trypsin may be used to hasten the proteolytic action. At the conclusion of this step the temperature and p_H are adjusted to that best suited for the diastatic conversion of starch to dextrins and maltose. The conversion is followed analytically by determining the reducing sugar content of the solution at regular intervals. When the conversion has proceeded to the desired point, the enzymatic action is stopped by heat. The mixture is filtered and the clear filtrate is partially evaporated under reduced pressure, is spray dried to a powder and automatically packed and sealed in tins.

Analysis (submitted by manufacturer).—

	per cent
Moisture	3.0
Ash	0.5
Fat (ether extract)	0.0
Hydrolyzed protein (N × 6.25)	0.5
Reducing sugars as maltose	50.0
Dextrins (by difference)	46.0

Calories.—3.9 per gram; 111 per ounce.

Claims of Manufacturer.—For use as a carbohydrate supplement to milk in infant feeding formulas. Especially intended for diets planned to be free of cereal protein. Does not cake on exposure to air.

NATIONAL LIVE STOCK AND MEAT BOARD NUTRITIONAL EDUCATIONAL ADVERTISING LEAFLETS

Sponsor.—The National Live Stock and Meat Board is an organization founded to promote the interest of branches of the live stock and the meat industry.

These educational leaflets comprise tables presenting diagrammatically the relative calory, calcium, iron, copper, phosphorus, protein and vitamin values of certain common foods, accompanied by brief and simple educational information on the rôle of protein, vitamins, phosphorus, calcium, iron and copper in nutrition and the energy requirement in nutrition.

WHITE CRYSTAL TABLE SYRUP

(85 Per Cent Corn Syrup, 15 Per Cent Rock Candy Syrup)

Packer.—D. B. Scully Syrup Company, Chicago.

Description.—Table syrup; corn syrup base (85 per cent) with rock candy syrup (15 per cent).

Manufacture.—The corn syrup (THE JOURNAL, March 5, 1932, p. 817) is mixed with the rock candy syrup in the indicated proportions. The rock candy syrup is prepared by melting extra large crystal cane sugar. The melt is boiled and filtered. The mixture is heated to 80 C. and automatically filled into cans.

Analysis (submitted by manufacturer).—

	per cent
Moisture	23.8
Ash	0.2
Fat	0.0
Protein (N × 6.25)	0.05
Reducing sugars as dextrose	30.6
Reducing sugars as dextrose after invertase inversion	2.2
Sucrose (estimated from reducing sugars)	7.8
Dextrins (by difference)	35.4
Sulphur dioxide	0.002
Carbohydrates (by difference)	76.0

*Calories.**—3.0 per gram; 85 per ounce.

* No methods are available for accurately determining the composition of syrups of this nature; therefore the foregoing analysis is roughly approximate.

Claims of Manufacturer.—For cooking, baking and table use, or as a carbohydrate supplement for milk modification for infant feeding.

REPORTS OF THE COMMITTEE

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS. RAYMOND HERTWIG, Secretary.

Acceptance Withdrawn

HORLICK'S MALTED MILK

Manufacturer.—Horlick's Malted Milk Corporation, Racine, Wis.

The container label and advertising present explicit infant feeding formulas for infants aged from 1 week to 12 months. The promulgation of feeding formulas in lay advertising is considered to be in conflict with the best experience, authoritative judgment and basic principles in infant feeding. The feeding of an infant by routine feeding formulas and instructions distributed by food manufacturers, or according to directions, printed materials, or advice of any person other than the attending physician who can personally observe the condition of the baby, may seriously endanger the health of the infant. The feeding of the baby during the first year is of fundamental importance to its health; wrong feeding may be disastrous. Every infant, the breast fed and doubly so the artifically fed, should be under the supervision of a physician experienced and skilled in the care and feeding of infants.

The manufacturer when informed of these opinions expressed himself as unwilling to remove the feeding formulas from advertising addressed to the public for merchandising reasons. The acceptance for Horlick's Malted Milk is being withdrawn for the preceding reasons; the product will therefore no longer be listed among the Committee's accepted foods.

Acceptance Withdrawn

WHITEFIELD GENUINE ORANGE JUICE
WHITEFIELD GENUINE GRAPEFRUIT JUICE
WHITEFIELD GENUINE ORANGE BUTTER

Manufacturer.—Los Angeles Sales Company, Los Angeles, formerly Whitefield Citrus Products Corporation of California, Ltd., Fullerton, Calif.

The manufacturer has not provided the required information and data for these foods which are now being called for by the Committee under its present Rules and Regulations for all its accepted foods. Therefore, the acceptance for these Whitefield Genuine Orange Juice, Whitefield Genuine Orange Butter and Whitefield Genuine Grapefruit Juice products and the privilege of use of the Committee seal or statements of acceptance on the labels and in the advertising are being withdrawn.

Not Acceptable

CERTAINTY LIMA BEAN FLOUR

The Beaver Valley Milling Company, Des Moines, Iowa, submitted to the Committee on Foods a lima bean flour called "Certainty Lima Bean Flour" prepared from selected dried California lima beans.

Discussion of Label.—The label prominently states that this flour is "highly alkaline in its reaction in the system," is "An anti-acid food product" and "Certainty Lima Bean Flour was prepared at the request of physicians who desired it for use in the diet in cases of high blood pressure, hyperacidity, and some kinds of kidney troubles. Its alkaline reaction in the body, according to medical authorities, is more than seven times as great as oranges, four times as great as carrots and five times as great as potatoes. It is highly recommended, not only for special diet in any form of excessive acidity, but as a delicious and satisfying addition to the ordinary diet, tending to counteract the acidity of modern foods."

Bread made according to the package directions was heavy and coarse and not a "delicious and satisfying addition to the ordinary diet." The prominent unqualified claim "an anti-acid food" may imply to the public that the product is recommended for neutralizing stomach acidity, which it will not do. Its alkalinizing effect in metabolism in the small amounts that could readily be eaten is negligible; metabolic acidosis such as occurs in certain disease conditions would not be appreciably affected. The claim that the product was "prepared at the request of physicians who desired it for . . . cases of high blood pressure, hyperacidity and some kinds of kidney troubles" is an objectionable vague reference to physicians and is deceptive in that the public is led to infer that physicians have proved the product therapeutically beneficial in the diseases mentioned, which is not the case—at least such claims have not received recognition by authoritative critics.

The discussion of diseases in lay advertising is conducive to self-medication, which conflicts with the best health interests of the public. The sick should be under the care of competent physicians. The prominent claims of alkalinity produced by the lima bean flour in the body connote some marked "health" or curative advantage to be obtained from use of this food or other similar potentially alkaline foods which is by no means established. When this lima bean flour is admixed with wheat flour as directed for the preparation of bread, its potential alkalinity is greatly reduced. It is an established fact that the urine can be alkalinized by alkaline ash foods; however, that there is any value in this alkalinization has not been established and, until it is, prominent claims or undue emphasis on alkalinization in connection with foods is objectionable in that such claims lead the public to believe that alkaline foods have mysterious "health" values, which have not been scientifically or clinically recognized or identified. The claim that this flour tends "to counteract the acidity of modern foods" is inappropriate; it discriminates against wholesome foods with an acid ash, such as breads, eggs and meat.

The company was advised that the label statements for this lima bean flour as a whole are misinformative, misleading, and deceptive to the public. The company has not taken steps to correct the label but expresses itself as desiring to use "some medicinal claims . . . in selling the product." This food, therefore, is not listed among the Committee's accepted foods.

Not Acceptable

SUNNY BOY SHORT PATENT FAMILY FLOUR (BLEACHED)
GRANDMA'S LOAF FANCY PATENT HARD WHEAT FLOUR (BLEACHED)
AETNA'S BEST FANCY PATENT FLOUR (BLEACHED)
GOLDEN DREAM FANCY PATENT FLOUR (BLEACHED)
LARABEE'S LARABELL FANCY PATENT FLOUR (BLEACHED)
MISS KANSAS FANCY PATENT FLOUR (BLEACHED)

The Commander Larabee Corporation submitted to the Committee on Foods the preceding list of flours, all of the grade recognized in the milling industry as "straight" flours; that is, flours composed of all the mill flour streams recognized as utilizable for commercial bakeries or home baking purposes.

Discussion of Names.—The respective flours bear such special designations as "short patent" and "fancy patent," which names are recognized as appropriate only for those flours differing essentially in flour mill stream composition from "straight" flour. Patent flours from the baking standpoint are considered higher grade products than are "straight" flours and usually demand a higher price. The present designations, being incompatible with the nature of the flour, are misinformative, misleading and deceptive.

The corporation when informed of this opinion has not indicated willingness to change the designations accompanying the trade names in accordance with the Committee's recommendation. These flours, therefore, are not listed among the Committee's accepted foods.

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SATURDAY, APRIL 15, 1933

PSYCHOANALYTIC ATTITUDES

It has been some twenty-seven years since the freudian theory first came to the United States through an article published by Boris Sidis in the *Journal of Abnormal Psychology*. This method of investigation and treatment had been known in Europe since 1881, when Sigmund Freud of Vienna developed his theory of the subconscious or unconscious, with a startling emphasis on sex, the sex urge or the libido as the basis of most human motivation. In the years that have passed, even Freud has retreated largely from this earlier position, so that today the interpretation of the libido may include many important motivations and urges other than the purely sexual. Nevertheless, there are many critics of psychoanalysis who have failed to keep pace with this changing point of view and who still write blasting anathemas against the name and all it represents. In this issue appears a letter by Dr. Karen Horney calling attention to two recent publications of this character.

An evaluation of the freudian contribution at this time is, no doubt, as difficult as it was fifteen years ago. The science, if it be a science, is still relatively new. As has been said, it is changing constantly. It is being submitted to intensive investigation in well controlled institutions and before scientific organizations. The initial act of revulsion, representing a puritanical response to the new point of view, is gradually being modified among those who are beginning to realize that the freudian contribution is a significant one. Intellectual channels have been stirred by the importance of the psychoanalytic method for an understanding of human conduct. Dramatists, novelists and poets have reflected its methods in literature and in art.

In the most recent volume of his book "Our Times," Mark Sullivan endeavors to determine the present attitude toward the freudian doctrines. He realizes that the freudian discussions have left some enduring effects, that they have revolutionized the treatment of the mentally ill, that they have led to freedom from self consciousness about talking of sex between the sexes, that they have broken down some of the false sentimentality about women, and that the conclusion is far from visible so far as actual evaluation of the freudian doctrines is possible. Thus he cites two diverse points of view:

As to judgments about Freudianism in 1932, Dr. William A. White, head of Saint Elizabeth's Hospital, Washington, D. C., writes the author:

"To my mind, Freud's greatness lies in his having evolved an entirely new point of view and a new method which will ultimately discover the facts which it is capable of discovering and discard the errors which are incident to its employment, just like any other scientific method or point of view. . . . The whole situation in my mind is quite similar in its history to the development of anatomy and utilization of dissection. There was just the same feeling of outrage against the early anatomists who insisted upon dissecting the human body, and these same early anatomists discovered all sorts of things that were not so, and subsequently had to be corrected by future observations more accurately checked up. It is quite the same with the analysis of the human mind. It is equally resented, and I have no doubt mistakes are made in the same way."

Another eminent neurologist, Dr. Frederick Peterson of New York, in a letter to the author in 1932, declared, with italicized emphasis, that *"Freudianism is a voodoo religion characterized by obscene rites and human sacrifices."* He adds that psychoanalysis has in innumerable cases caused mental aberration, insanity or suicide, and that much of the work of present day neurologists has come to be the "reconstruction of unfortunate victims of Freudianism."

Mr. Sullivan recognizes as more important than the freudian doctrine of behavior the biologic urge to function. The urge of an artist to paint, of a poet to write, of a horseman to ride, of a farmer to plow and plant, is as powerfully animating a motive of behavior as the motives suggested by Dr. Freud. He insists that a man born with a passion for the sea may, through circumstances, be carried into the career of a bank clerk or spend his days in an elevator cage and that such a man becomes as much a case of repressed desire as any case that Freud catalogues. Finally, he adds: "Physicians, psychiatrists, like Dr. Freud and his disciples, have their own urge to function; and their zest in it may carry them, and the theories that they evolve, to extremes—at which they encounter the historian's urge to doubt."

Far too many critics of psychoanalysis confuse the contribution of Freud himself, and of recognized scientists who have devoted themselves to this field, with the activities and actions of numerous charlatans who have taken advantage of the public interest in sex to exploit themselves either for commercial returns or for notoriety. It is important in criticizing psychoanalysis to distinguish clearly between the scientific investigator and the charlatan. It would be folly to deny that the work of Sigmund Freud is a fundamental contribution leading eventually toward greater happiness for mankind. It would be equally fallacious to assert that it is today an unmixed blessing. In view of the dynamic nature of the freudian contribution, the physician will do well to concern himself with those aspects which touch the diagnosis and treatment of disease, and to recognize the necessity for controlled study which must finally come as a part of the established curriculums of universities.

THE ETIOLOGY OF PUERPERAL FEVER

The continuing high maternal death rate in this country is a subject of great concern. A conservative conclusion from statistical reports of maternity clinics in different parts of the world shows puerperal infection to be the cause in 30 per cent of the deaths following childbirth. These reports also show that the organisms found in the blood stream in from 70 to 90 per cent of the cases are hemolytic streptococci. That the streptococci are responsible for most severe puerperal infections has been known since Mayrhofer, in 1865, found the organism in smears from the tissues and Pasteur, in 1878, cultivated the streptococci from fatal cases. Further evidence of the streptococcic etiology has been presented from time to time by the epidemics of puerperal infection in maternity hospitals traced to this organism. While the severe and fatal forms of puerperal infection are usually associated with hemolytic streptococci, the milder forms are traced to localized uterine infection caused by a variety of organisms, including nonhemolytic streptococci, colon bacilli, gram-positive bacilli and cocci.

It is generally held that organisms present in the vagina before delivery seldom cause puerperal infection. This is supported by experimental work, notably that by Taylor and Wright.[1] These workers made vaginal cultures from 1,123 pregnant women and found hemolytic streptococci infrequently before delivery. In no case was there undoubted evidence of the production of sepsis by hemolytic streptococci present before delivery. The organisms present in the antepartum vagina were listed as Staphylococcus albus and aureus, diphtheroid bacilli, colon bacilli, and nonhemolytic, hemolytic and anaerobic streptococci. They also found that one of the chief changes in the genital flora following delivery is an increase in the colon bacilli, and these produce a certain amount of sepsis. This is one important source of infection which it should be possible to reduce. From the studies by Taylor and Wright, and others, it would seem that there is some slight risk on account of the bacteria in the vagina before delivery, but that it is the bacteria entering the genital tract shortly before, during or after labor that are practically always responsible for severe infection.

Since severe and fatal puerperal sepsis most often is due to hemolytic streptococci by analogy with other known streptococcal infections, such as scarlet fever and erysipelas, one would expect advances in specific therapy. Numerous efforts are being made to determine what particular strains of this organism are found, and especially if any of them are related to the strains causing scarlet fever, against which there is effective serum for active and passive immunization. Lash and Kaplan[2] obtained a toxin from puerperal hemolytic streptococci with which they produced antitoxin that protected rabbits against the lethal dose of the organism. Later they[3] succeeded in preparing an antitoxic serum that gave good results in cases of acute endometritis with septicemia due to hemolytic streptococci. Of their patients receiving antitoxin, 32 per cent died, while in the control group 61 per cent died. The difficulty in this form of specific therapy is that probably immunity to certain strains of streptococcus does not imply immunity to all, because puerperal infection may be caused by numerous distinct strains of hemolytic streptococci. Several reports have appeared in the literature of cases of puerperal infection treated with scarlet fever antitoxin. Its effect in most cases was entirely antitoxic, and the degree of such effect depended on whether the infection was by the scarlatinal organism or by one closely allied to it. The consensus seems to be that scarlet fever antitoxin has a specific value in the treatment of puerperal and postabortive cases of sepsis due to hemolytic streptococci.

Efforts have been made to determine also the incidence of puerperal infection in those who are immune to scarlet fever, as evidenced by a negative Dick test. In their review of 8,000 cases of puerperal infection, Adair and Tiber[4] suggest that women who have had a previous infection with the streptococcus of scarlet fever are less liable to a morbid puerperium. Hudson[5] studied this problem in 188 pregnant women, of whom 29 were Dick positive, 43 had been immunized and 100 were Dick negative. There were no deaths from childbirth in this group and only eight patients developed infection of pelvic origin, and all of these were Dick negative. In a series of 600 women, 22 per cent of whom were Dick positive, Baird and Cruickshank[6] found little difference in the puerperal morbidity rates of the Dick positive and the Dick negative groups. Salmond and Turner[7] and Stent[8] have also recorded their results in two series of 533 and 500 women, respectively. In neither group was there sufficient evidence to support the view that a positive reaction to scarlatinal toxin is an index to susceptibility to puerperal sepsis. Stent found a higher incidence of severe sepsis in the Dick positive than in the Dick negative groups—four out of fourteen as compared with five out of forty-six. These results correspond with those of Baird and Cruickshank, which showed that out of eight Dick positive cases with puerperal sepsis, seven, or 87 per cent, presented severe infections whereas only ten of twenty-one, or 47 per cent, of the Dick negative group presented severe

1. Taylor, Joan, and Wright, H. D.: The Nature and Sources of Infection in Puerperal Sepsis, J. Obst. & Gynaec. Brit. Emp. **37:** 213, 1930.

2. Lash, A. F., and Kaplan, Bertha: Puerperal Fever. Streptococcus Hemolyticus Toxin and Antitoxin, J. A. M. A. **86:** 1197 (April 17) 1926.

3. Lash, A. F.: The Therapeutic Value of a New Concentrated Streptococcus Antitoxin in Puerperal Fever, Am. J. Obst. & Gynec. **17:** 297 (March) 1929.

4. Adair, F. L., and Tiber, L. J.: Infection in the Puerperium with an Analysis of 8,000 Cases, Am. J. Obst. & Gynec. **17:** 559 (April) 1929.

5. Hudson, G. E.: Scarlet Fever Immunity and Streptococcal Puerperal Infection, Illinois M. J. **60:** 328 (Oct.) 1931.

6. Baird, Dugald, and Cruickshank, Robert: Dick Test in Pregnancy and Its Relation to Puerperal Sepsis, Lancet **2:** 1009 (Nov. 8) 1930.

7. Salmond, Margaret, and Turner, Beatrice: The Dick Test in Pregnancy, Brit. M. J. **2:** 145 (July 27) 1929.

8. Stent, Lois: Dick Test in Relation to the Incidence of Puerperal Infection, Lancet **1:** 1066 (May 17) 1930.

sepsis. Streptococcus antitoxic immunity may not prevent the invasive action of the streptococcus, as is shown by the occurrence of streptococcus tonsillitis in individuals artificially immunized to streptococcus scarlet fever toxin, but the immunity might be expected to modify the severity of the infection, as in fact it does, for those immunized individuals do not develop scarlet fever. The weight of opinion seems to be that although a negative reaction to the Dick test in a parturient woman does not indicate an insusceptibility to streptococcic infection, it does reveal an antitoxic immunity which may modify the severity of the infection or help to localize it, should it occur.

It would seem that there has been too much of a tendency to regard puerperal infection as a distinctive disease. There seems little justification for regarding it in any such light. There is an area of what is practically traumatized tissue exposed to infection by organisms of diverse kinds and of varied origin. What happens depends, as in all infections, on the nature and virulence of the organism, on the local condition it finds for multiplication and on the resistance of the patient. The destruction of all streptococci and other organisms of sepsis local both to the patient and to the obstetrician is obviously the grand ideal, but this has not been achieved. The main harbors of sepsis, however, are known; the routes and modes of infection can to a large extent be stopped or countered, while tissue resistance must be exalted, if a method can be found, and preserved at its highest level by avoiding all unnecessary tissue damage.

Current Comment

PHILADELPHIA'S PLAN FOR CHILDREN WHO NEED EYE GLASSES

The repute of Philadelphia as a center in the field of ophthalmology bids fair to be enhanced through a plan of the Philadelphia County Medical Society to determine the presence of defects of vision in thousands of children. A committee was appointed to investigate the situation among the school children. It was found that in the last fiscal year 21,202 children had been recommended for eye glasses. Of this number, more than 64 per cent had not received attention from the dispensary eye services in Philadelphia, from private physicians, or otherwise. This large percentage of untreated eyes was practically the same three years ago. While the clinics always appear crowded with children, during the busiest of the last six years only 4,744 children sought service at eye clinics. The committee assumes that this is due either to a reluctance to avail themselves of clinic service or to their inability to pay the fees of ophthalmologists. To determine the economic condition of these prospective cases of handicapped eyes, school nurses visited the homes of the last two children on their lists of those who were visually defective. They found among 147 unselected families that the median income for the entire group was $7 a week. There were 30 families among the 147 that were able to pay something for eye service, a percentage of 20.4. The plan proposed by the society to provide eye service for the children of these families calls for the volunteering of ophthalmologists to accept cases under a special basic fee schedule, which may be amended by the nurse according to the special situation of the family. The ophthalmologist may select the hours to suit his convenience. The nurse will provide him with statements of the parents' financial status. The committee of the county medical society is asking all approved ophthalmologists of Philadelphia if they are willing to treat the poor, but not indigent, school pupils on the basis of this schedule.

THE SOURCE OF INFECTION IN ADULT TUBERCULOSIS

In the last few years a change has occurred in the trend of theory on the etiology and pathogenesis of adult tuberculosis. It has been recognized for many years that the common excavating, upper lobe tuberculosis of adult life represents a reinfection or "superinfection" occurring in human bodies already the seat of an old childhood infection, and by almost general consent the modified anatomic character of the second infection has been explained as the result of a new immunologic state referable to the first infection. Uncertainty has always existed, however, about the source of the second infection. Until recently the majority of students of the problem seem to have felt that it was endogenous. More specifically they believed that various stresses and strains broke down an acquired resistance, permitting tubercle bacilli from the older lesion to acquire new footholds. In support of this hypothesis, observations were cited purporting to show that the incidence of tuberculosis was no greater in physicians, nurses, relatives and others in close contact with tuberculous patients than in those not so exposed. A study of 40,000 married couples by Pope and Pearson [1] has often been quoted in support of this view. At present a reversal of this conception seems imminent. Reports of studies of tuberculosis among large groups of college students,[2] while cautious in statement, all convey the impression that their authors consider tubercle bacilli from outside contacts, rather than from old latent tubercles within, as the source of the infection. Recently, moreover, a new study of marital tuberculosis has appeared, in which conclusions are reached that are exactly opposite to those in the monograph of Pope and Pearson. Using roentgenographic methods, Opie and McPhedran [3] have found that husbands and wives in marital contact with tuberculosis are infected from five to nine times as often

1. Pope, E. G., and Pearson, Karl: Drapers Company Research Memoirs: III. Marital Infection, Dept. of Applied Mathematics, University College, University of London, 1908.

2. Hetherington, H. W.; McPhedran, F. M.; Landis, H. R. M., and Opie, E. L.: Tuberculosis in Medical and College Students, Arch. Int. Med. **48**: 734 (Nov., pt. 1) 1931. Myers, J. A., and Wulff, Marjorie: Eleven Years' Observations on Tuberculosis Among University Students, Am. Rev. Tuberc. **26**: 530 (Nov.) 1932. Soper, W. B., and Wilson, J. L.: The Detection of Pulmonary Tuberculosis in Three Thousand Students Entering Yale University, ibid., p. 548.

3. Opie, E. L., and McPhedran, F. M.: Exogenous Tuberculous Infection of Adults: Marital Tuberculosis, Arch. Int. Med. **50**: 945 (Dec.) 1932.

as persons with no known contact with this disease, the higher incidence being found in those cases in which one partner had constantly positive sputum. The question is one of more than academic interest. The direction of effort for tuberculosis control in adults rests on its answer. According to the older theory, chief attention should be devoted to avoiding or reducing the intensity of strains that might permit the flaring up of old latent tuberculous infections, largely an individual matter, whereas on the basis of the newer view continued emphasis should be placed on such hygienic measures as will stop the spread of contagion at the source.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., central standard time, over Station WBBM (770 kilocycles, or 389.4 meters). The subjects for the week are as follows:

April 18. Hidden Diseases of Childhood.
April 20. Athlete's Foot.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

April 22. Measles.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

Twenty-Ninth Annual Meeting, held in Chicago, Feb. 13 and 14, 1933

(Continued from page 1116)

DR. HARRY E. MOCK, Chicago, in the Chair

JOINT SESSION OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS AND THE AMERICAN CONFERENCE ON HOSPITAL SERVICE

NURSING

Nursing and Nursing Service

EFFIE J. TAYLOR, R.N., New Haven, Conn.: The work of the Grading Committee has shown the nursing profession where it stands. It has denounced the system which has placed the profession in its present state of chaos. The majority of the difficulties today in nursing are inherent in the system of education and apprenticeship service, though many of the problems, because of the world economic situation, nurses are sharing in common with other professional workers. Until recent years the cry of "shortage of nurses" was constantly about our ears. As directors of nursing services as well as educators, we were forced to put forth our greatest efforts to encourage young women to enter nursing schools which during the last decade were increased each year by hundreds in order to meet the urgent needs of hospital nursing services for the care of patients. As a profession, therefore, we are not without a certain responsibility for the oversupply of nurses, though the primary responsibility should not really be accorded to nursing.

Nursing is still suffering from the handicap of paying for its education in hours of work and service and from endeavoring to make these hours of work and service replace hours of supervision and instruction. The preparation of students for nursing in the majority of schools is largely a training through chance experience rather than through a conscious process of education.

The first objective of any professional school should be the education of the student for her vocation, and the service she may give should be incidental to her education for her profession. The fundamental objective of the nursing service of the hospital is the daily and immediate care of the patients, and all other functions should be secondary. But the primary function of the school of nursing is in the hospital inevitably evaded. It is impossible when the school of nursing is charged with and responsible for the nursing service that the care of the patient will not become its primary function and its resources be used for the care of the patient. Therefore, since the chief resources of the school are its students, the first use of the students under existing circumstances will be for the care of patients. The amount of instruction which a student receives under this system depends largely on the ability of the master to teach, the number of students to be taught, and the time at the disposal of each group. In nursing schools even the apprenticeship system is exploited, since the major time of the student is spent in service with the minimum of supervision and instruction.

Miss Blanche Pfefferkorn, director of the department of studies of the National League of Nursing Education, has recently made a study of student activities in twenty-two open wards in ten different hospitals. The study was confined to an observation period of one day of ten hours in each ward. She discovered that the average time given directly to bedside instruction was approximately fifteen minutes per ten-hour day, and the average time of direct supervision was eleven minutes per ten-hour day, a total average of thirty-six minutes out of 600 minutes which could be recorded as teaching. The figures ranged from 0 to 115 minutes of instruction and 0 to 94 minutes of supervision. In two wards during an entire day no time was recorded for teaching, and in fifteen wards less than twenty minutes of the total 600 was recorded for teaching. In the study, the maximum amount of supervision recorded was ninety-four minutes. In thirteen wards no time was recorded for supervision, and in eighteen the supervision amounted to less than twenty minutes. In another study in which the domestic or non-nursing duties were tabulated for both graduate staff and student nurses, a remarkable and significant picture is presented. "The minimum amount of time spent by graduates in non-nursing activities is 2 per cent of the total time, and by student nurses 3 per cent; but the maximum amount of time spent by graduates in non-nursing activities is 13 per cent and by students 67 per cent." The picture needs no comment. It is obviously convincing that when graduate nursing service is provided, maid and helper service is also provided; but where student service is depended on, the subsidiary staff is correspondingly smaller.

It is possible that from 2 to 3 per cent of subsidiary or non-nursing duties may be essential to the comfort and safety of the patient, but an assignment of non-nursing duties above a possible 10 per cent is an unwarranted use of the time of students, and even from an economic standpoint such use of students' time is open to question.

Some interesting figures have recently been received from the Grading Committee to uphold the statement that neither formal nor informal bedside instruction of student nurses is adequate to justify the use of the term "school" as applied to most of our present schools of nursing, for it is at the bedside that nursing can best be taught. The reason is obvious when it is found that the average or typical school out of a total of 1,146 reporting has approximately a daily average of 191 patients, with 56 student nurses, 4½ head nurses, 2½ supervisors and 1½ instructors. Even on the apprenticeship basis this teaching and supervisory staff is exceedingly small, and one cannot but wonder that hospitals have been willing for so long a time to accept responsibility for a nursing service which, under the conditions made known through recent statistical studies, must inevitably be precarious. Very young student nurses inadequately taught and supervised are carrying a great responsibility. It is appalling to review the statistics on nursing at night, and to realize the paucity of the nursing staffs in most hospitals. We are told that we have an oversupply of nurses. If, however, hospitals throughout the land were sufficiently staffed, to say nothing of supplying adequate nursing care to the community, the majority at least of able nurses would be holding positions.

The ideal concept of education in nursing is based not on less emphasis on nursing activities concerned in the care of patients but on a new kind of teaching to insure more intelligent performance. Hospital nursing service may signify a high type of care to patients or it may signify a variety of

service to the hospital which enables it more economically to provide for patient care and to function more economically as a whole. Here lie some of the fine points of distinction in defining nursing service.

Education for nursing has provided an excuse for the hospital, and the system in practice has suggested an easy financial escape for the student. Education must be paid for by some one. Nursing education cannot be obtained without cost, and a part of this cost at least the student herself must pay. It is obvious that the hospital cannot provide both maintenance and education without receiving something in return, but education and service are incompatible when jobs are the first essential, when the conservation of time is the greatest factor, and when quantity of achievement supersedes quality in procedure. We have been struggling for many years with certain fixed ideas which we are now beginning to interpret as delusions. That they have served an end no one will deny. But with new insight into our previous mistaken beliefs we must attempt to make the obvious adjustments.

Comparative Costs of Undergraduate and Graduate Nursing

C. RUFUS ROREM, PH.D., Chicago: More than 20,000 nurses are now being graduated annually from the 1,800 nursing schools. The Committee on the Grading of Nursing Schools has estimated that 10,000 new graduate nurses annually would suffice to meet the prospective demands for nursing care for the predictable future. The customary argument in defense of a nursing school is that it saves money for the hospital. What is the effect of undergraduate floor nursing on the employment of graduate nurses for "special duty" and what is the effect of "special duty" nursing paid directly by patients on the payment in full of ordinary hospital bills? The experience of 9,000 families during a twelve-month period showed that the average costs of hospital care for families receiving such care was $67, whereas the average expenditures for private duty nursing was $74 for families receiving such care. It is possible that the employment of a special nurse may often interfere with the payment of a hospital bill, and it is well known that "special nursing" fees often interfere with the payment of reasonable fees for the services of physicians. A table was made of the number of undergraduate and graduate nurses employed in the "morning care" of patients in thirty general hospitals, with an average occupancy on the day of the study of 140 patients. These hospitals were those selected as samples by Dr. May Ayres Burgess for the purpose of indicating the ratio of student and graduate nurses to patients. The table shows that on the day of the study there were 250 graduates and 1,400 undergraduates on floor duty in these thirty hospitals. In addition there were 340 "special duty" graduate nurses and 1,400 undergraduate nurses serving in the hospital for morning care during this day. By using annual salary equivalents, one can estimate the total annual costs to the hospital and to the patients for "services" from these undergraduate and graduate nurses; the total costs to the hospital would be $1,355,000. But the total costs to patients would include the fees to special duty nurses also. When the annual payments to special duty nurses are considered, there must be added nearly a million dollars, an expenditure that falls on less than one fourth of the hospital patients but nevertheless increases the total by 65 per cent.

In the foregoing calculations, the costs of graduate nursing by floor supervisors and floor duty staff are estimated at the average rate of $1,800 annually for salaries and maintenance. A rate of $700 is used for the annual maintenance costs, monthly allowances, and educational procedures of the undergraduates on day duty For the graduate duty nurses a rate of $8 a day, which includes a daily rate of $6.50 to the nurse and $1.50 for nurses' board, is estimated as the basis for the annual payments necessary to maintain a staff of 340 graduate nurses continuously on "special duty" during the day services. Whether these estimated salary equivalents are applicable to a particular hospital does not affect the nature of the problem, although they would influence the solution of the problem in any given institution. These institutions, however, were themselves above average in the ratios of graduate to undergraduate nurses, for even in 1932, 68 per cent of the schools participating in the second "grading" did not employ even one graduate floor duty nurse. Using these figures, and as shown in the table, the total cost of nursing "to the hospital" is 1⅓ millions annually, and the total cost to the patients is 2⅔ millions.

What would be the effect on the total costs to patients of using graduate staffs in these institutions? Another table was made, setting forth estimated personnel and costs to the hospitals and the patients on a graduate staff basis. These estimates would vary in their applicability from one hospital to another. The primary purpose of the calculation is to illustrate the nature of the problem and to indicate the possible effect of the "special duty" situation on costs to patients. In the estimates it is assumed that the number of graduates employed as supervisors and previously on floor duty would be unchanged, as would the average salary equivalent. It is assumed that the 1,400 undergraduates would be replaced with 900 graduates (two graduates for three students) at average salaries and maintenance of $1,800 a year. The change would raise the costs to the hospital for these services from $1,355,000 to $1,725,000, an increase of $370,000. These estimated ratios of undergraduates to graduates, or the estimated costs of undergraduates, might not apply to a particular hospital. The number of graduates needed to replace the undergraduate employees would vary with the policy of the hospital as to the number of hours and kinds of floor duty regularly required of undergraduates. Hospital directors should not maintain too stoutly that a student is "as good" as a graduate, or even "nearly as good"; for, if the average technical and economic value of students approaches that of graduates, one is forced to question the quality of education in the nursing school. To be sure, a hospital director may frankly admit that his nursing school is a farce, but usually those who proclaim the economic and technical virtues of the undergraduates also uphold the paradoxical view that their own graduates are well educated.

The rate of pay for graduate floor duty nurses in the foregoing illustration is, of course, much higher than would be necessary to enlist the full time services of graduate nurses. Even during times of prosperity, a salary of $100 a month plus maintenance is considered good income. At the meetings of the American Hospital Association in Detroit in 1932, many hospital directors reported that they had obtained any necessary number of graduate nurses at monthly salaries ranging from $25 to $50, plus maintenance. These, however, are "depression figures."

The shift from undergraduate to graduate nursing would undoubtedly influence the average number of "special duty" graduate nurses employed by the private patients. In the second table the calculations were based on an estimated reduction of 40 per cent in the amount of special duty floor nursing. The validity of such an estimate for a particular hospital would be influenced by such factors as the actual or presumed improvement in quality of floor nursing for private patients, the reduced pressure on hospital administrators and physicians to "make work" for the nursing school alumnae, and the possibility of using members of the full time graduate staff for "special duty," either on a group nursing basis or on an hourly basis within the hospital. If it is assumed that there would be 200 graduate special duty nurses continuously on day duty for these 1,400 patients in these hospitals, the total annual costs of special nursing at $2,000 a year would be $400,000 a year.

A shift from undergraduate to graduate nursing would, according to these calculations, more than double the number of nurses continuously employed in the care of hospital patients. There would be 1,350 instead of 590 nurses employed to perform the nursing services to patients in these hospitals. The net result of this shift would be to increase the hospital operating costs by $375,000 annually. The total costs to hospital patients for nursing care, however, would be reduced by approximately $216,000 because of the decreased amount of "special duty" graduate nursing service required in the hospitals.

Those who disagree with the general implications of these figures may argue that several important factors have been overlooked.

Data from the Committee on the Costs of Medical Care indicate that half of the total payments by families for nursing services is made by families with annual incomes of $5,000 or more. In 1928, this group comprised only 10 per cent of the white families in the United States. The tendency for a special nurse to be engaged for the care of a patient varies directly with the annual income of his family. Data from the com-

mittee indicated that special nurses were engaged for 7 per cent of the cases hospitalized for one day or more from families with incomes of $1,200 or less. The rate was 16 per cent for families with average incomes from $2,000 to $3,000, and 69 per cent for those with incomes above $10,000. The support of the nursing profession must have a wider base than the upper 10 per cent of American families, if it is to be of greatest service to the American people.

If the economic effects of undergraduate nursing were to be measured strictly in terms of the hospital expense budget, probably many hospitals would lose by a shift to undergraduate nursing staffs. But when the economic effects on hospital patients, the nursing profession, and the general public are considered, the possibility of gain is less apparent for the individual hospital and reflects a definite loss for the nurse and for the public.

The Function of the Nurse as Defined by the Physician

DR. GEORGE H. COLEMAN, Chicago: No better statement of the ideal qualifications of nurses, from the standpoint of physicians, can be formulated than has been done by the Committee on the Grading of Nursing Schools, which is as follows:

> What they want are young women of good breeding and attractive personality with high professional standards which lead to the meticulous following of medical orders. They want women, so sensitive, alert and finely observant and with such a wealth of experience behind them, that they will be able to observe changes in symptoms and report them quickly and intelligently to the physician. Even more than this they want nurses who are graduates of good schools, who have a thorough grounding in bedside nursing and who can understand the patient's viewpoint—nurses "who know how to make the patient comfortable."

One of the most important tasks confronting us is to devise ways and means of reducing the quantity and improving the quality of nurses to the end that there will be employment for all nurses and so that the patients will have the service they are entitled to receive. An ever increasing amount of work which was formerly performed solely by the physician is now relegated to the nurse. The complete cooperation of the medical profession, the nursing profession, hospitals, and the lay public is essential in such a project. Let us remove the trade or vocation stigma from nursing and raise the educational requirements and training standards to a genuinely professional level in order that nursing may successfully compete for students with the other professions now open to women. Let us control nursing schools and nursing practice as medical schools and practice have been and are being controlled. There seems to be no evident reason why such regulation could not be accomplished as effectively and as quickly as it has been done in medicine through the guidance and efforts of the Council on Medical Education and Hospitals.

If the education of nurses becomes a public responsibility and becomes the recipient of public support, no nurse (unless she has by postgraduate study or by long and special experience become qualified as an expert nurse in some particular field) should refuse any kind of duty requested from her. Discrimination by nurses against certain types of cases, against certain types of duty, such as day or night work, hospital or home nursing, and their unwillingness to accept duty during the holiday seasons is one of the most serious complaints registered against nurses by both patients and physicians.

I hope to see a real extension of the so-called hourly nursing. Patients who have had the service of the hourly nurse are practically unanimous in their appreciation and satisfaction in the service obtained. Such success in this venture is due to the high type of socially minded nurse who volunteered to engage in this experiment.

From the standpoint of the physician, so-called practical nurses are in the main quite unsatisfactory because they have had little or no instruction and almost no hospital experience. From the standpoint of the patient, practical nurses are often satisfactory not only because of the lessened expense but also because they are willing to help out with the housework.

There is a great need for a type of nursing service which would be sort of midway between the practical nurse and the registered nurse.

The Plight of Nursing

DR. C. W. MUNGER, Valhalla, N. Y.: What can we as hospital administrators do to alleviate the pressing problems of the moment? First we must study the schools of nursing for whose operation we are responsible. We must collect data concerning the employment situation among the alumnae of our schools. We must study the future economic prospects of these graduates. We can no longer report, with pride, that "this year's class exceeds in number that of any previous year." We should be required instead to prove that a reasonable proportion have hope of employment, if not now, at any rate in the more rosy future for which we are hoping. Beyond the slightest doubt, hundreds of schools of nursing should be completely abandoned; thousands more should curtail their output. Early in the present difficulty, nursing leaders were wise enough to see that a period of unemployment among nurses might be utilized by many of them as a chance for professional self improvement, through further training and study. Postgraduate courses, infrequently encountered in the past, have increased in number, and with few exceptions these courses have long waiting lists. Is this not, temporarily, a "way out" for many hospitals desiring to reduce undergraduate groups? We hospital administrators can but admit that nursing, through students, has paid us well. We have or have not, as the case may be, compensated the student nurse through valuable instruction, but in either case our financial outlay for the student-nursing of our patients has not been great. Even at the present low salaries at which institutional nurses may be engaged, we would add an impossible burden to our already overtaxed budgets, were we to attempt forthwith to replace all students by a paid graduate service. It seems justifiable, therefore, that we should look, for the time being, to the postgraduate nursing student as a partial solution to our problem. Some hospitals have evolved plans whereby a patient requiring day and night special nursing is able to employ three nurses on eight-hour duty at the same price he formerly paid for two nurses on ten-hour duty. This plan seems to have worked satisfactorily, in some instances. While it no doubt gives better service to the patients, it fails, nevertheless, to consider the fact that the plan does not reduce the patient's total bill. It seems obvious that there can be no hope of stable employment in the nursing field at any time in the future unless we curtail production of nurses at its source; viz., the hospital school of nursing. Let us profit by the lesson which has been taught by the depression and resolve that never again will the hospital field indulge in a wholesale quasieducational program which has been the real cause of the sorry plight in which we now find the nursing profession.

DISCUSSION

DR. ERNEST E. IRONS, Chicago: As Dr. Coleman indicated, there is much resemblance between the present problems of nursing education and those encountered in medical education. Twenty-five years ago there were 160 medical schools in the United States—more than half the world's supply. Many afforded inferior training to their students, and the facilities in the best were much less than those offered today. An extensive survey was planned and carried out by the Council on Medical Education and Hospitals, created for this purpose by the American Medical Association. Standards of admission were raised; quality of teaching and clinical opportunity and quality of graduates were rapidly improved. The total number of schools was reduced from 160 to 76, 66 of which are four year class A schools. It is to be hoped that nursing education may profit by the experiences of medical education. The causes of production of inferior nurses seem to be the same as those of inferior doctors—careless selection, poor educational background, and poor instruction and training. One can't get far in the education of a medical student if he lacks ideals and personality, general cultural education, or training in the basic sciences. Nor can much be expected of a nurse who lacks a high school education and who enters the hospital nursing school to get room, board and a change of environment. In hundreds of hospital schools those in authority have continued to use the student nurses to get the work done and have been but little interested in quality of instruction. It is this profiteering in nursing education by hospitals that has contributed largely to the difficulties of the present situation. In 1926 there were 2,155 nursing schools in this country. Since then many hospitals have been established and presumably some of these have felt it incumbent on them to start a school. A few schools have been discontinued. The present trend is indicated by a report this month by Mrs. Burgess. "In the first grading study 1,397 schools reported 68,821 students, or an average of 49 students each. The corresponding figures for the second grading, about

three years later, show 1,383 regular accredited schools which took part in the second grading with 74,337 students, or an average of 54 students each. . . . While some hospitals are closing their schools, others are increasing the size of their schools and the total number of students being admitted is still increasing." Even in the past year, according to this report, in only six states have the numbers of students admitted been reduced, in two states they remain the same, and in the remaining forty states the first year class is larger than the second year class. These increases vary from 10 to 50 per cent. A complete solution of the nursing problem and a rectification of present errors is probably not immediately possible. Among the points suggested by papers today the following seem especially fitted to meet in part the present situation: 1. The immediate employment of considerable numbers of graduate nurses to replace student nurses in hospitals. 2. Reduction of number of student nurses in training schools, and the replacement of student labor by graduate nurses and maids or helpers. 3. Recognition that the cost of nursing education is not a proper charge on hospitals but should be provided for by endowment or by sources already available to other forms of education, for which the student nurse should pay. Recognition by the hospitals that the obligation assumed when the hospital establishes a school is not discharged by giving the student nurse bed, board and a place to work. 4. The elimination of allowances paid to nurses by 88 per cent of hospital training schools. This money, if available, should be expended on educational facilities. 5. The affiliation and, if possible, union of nursing schools with other real educational institutions. In many schools of nursing, no one at present is primarily interested in education. 6. The importance of distinguishing between endowment and subsidy in the various schemes of socialization of nursing that are likely to be offered during the present emergency, and to bear in mind that a dole is essentially a measure that tends toward parasitism and hinders progress. 7. The setting up of a mechanism to carry into effect such plans as may be agreed on, in the close cooperation with the Council on Medical Education and Hospitals of the American Medical Association.

KATHARINE J. DENSFORD, R.N., Minneapolis: May I emphasize some of the policies which Miss Taylor has brought before us. They are as follows: 1. Distinction between education and service. 2. Recognition that the hospital does not provide education but that it does provide good nursing care for its patients, the criterion of this service being not in terms of economy alone but also in terms of quality. 3. Establishment of a school of nursing as a separate unit of organization from the hospital. 4. Establishment of a school with education as its primary aim. 5. Assignment to the school of the specific responsibility of formulating the nursing curriculum with any assistance the school may wish from specialists in the various fields. 6. Building of a curriculum on the basis of community rather than hospital needs. 7. Recognition that the practice of nursing is at the bedside but that, to be safe and intelligent, this practice must be learned under expert supervision. 8. Provision of adequate teaching and supervision to guarantee both formal and informal teaching at the bedside. 9. Assignment of nonnursing duties to nonprofessional workers. 10. Choice of students on the basis of quality rather than quantity. 11. The relation of each group to other groups without the sacrifice of any group. Miss Taylor indicates that the number of schools to be desired is a moot question. Almost every one agrees, however, that there are too many schools. Since the community in so many instances does not need the school, and since as good or better care of the patient can be provided without, in frequent instances, additional cost, may there not be helpfulness of the medical, hospital and nursing, as well as lay, groups in the closing of all such schools? Almost as important, and, to my mind, almost more essential than the closing of schools, is the limiting of the number of students entering any school. No matter what the number of schools, if the number of students continues to increase, the present unsatisfactory conditions in nursing will continue. Many schools in the country have closed, but the number of students has not decreased, nor will it do so until there is helpfulness of all groups concerned in this problem of limiting the intake of students.

DR. FREDERIC A. WASHBURN, Boston: After studying these tables of statistics accumulated by various committees supported by various foundations at tremendous expense, if they don't jibe with my own experience I feel that I have a right to question them. The gist of Mr. Rorem's argument is that the cost to the community is greater when a hospital does most of its nursing by pupil nurses, because pupil nursing service is so inferior that a large number of special nurses are needed and therefore the cost to the community is greater. The experience at my hospital completely controverts that argument. We have about 600 patient beds and about 600 nurses and orderlies; 300 in the training school, 240 graduate nurses, and about 50 orderlies, not counting special nurses. Our service is divided into three grades. One is for the Phillips House, which is the hospital for private patients, staffed entirely by graduate nurses. In that building the floor nursing is adequate. The class of people who go to the Phillips House demand special nurses to a large extent. Our expenditure in the Phillips House for special nurses in the year 1932 was $85,000. The next group is the Baker Memorial, the hospital for people of moderate means, where the floor nursing is done by both graduates and pupils, a few more graduates than pupils. There every attempt is made to make the floor nursing more than adequate so as to save the patient the cost of special nursing. There we had about half pupil and half graduate nurses. There the expense for special nursing, including the group nursing, last year was $45,000. The special nurse is put on only when it is absolutely necessary for the need of the patient. At the Phillips House the special nurse is put on by the caprice of the patient. The third group is the General Hospital, where the nursing is done almost entirely by floor nurses, and there the expense for special nursing last year was $12,000 or less. It is an absolute reversal of the statistics which Mr. Rorem showed us. It will be contended, very likely, that the figures which I give you for a large, long-established Eastern general hospital are not typical of the situation in the country. I dare say that is true. So far as we are concerned, it would cost the hospital a great deal to give up its training school. We estimate that it would be costing $137,000 more if we had no training school and did it by graduate nurses. It would not cost the community any less if we changed and had graduate nurses. I think I have demonstrated that, so far as we are concerned, so that argument of his seems to me to be refuted. I haven't any doubt that there are many hospitals conducting training schools that ought to give them up, because it would be less expensive for them to have graduate nurses; but those are the smaller hospitals. I am in full sympathy with the desire to cut down the number of nurses graduating. I should like to see the Massachusetts General Hospital have more graduate floor nurses. It would give us better continuity of work in the wards, it would cut down the size of the training school. But don't let us fool ourselves. If we are going to do it at the Massachusetts General Hospital, we have to produce $137,000 a year.

ADDA ELDREDGE, R.N., Madison, Wis.: Recent graduates Dr. Coleman spoke of as being, because of their longer training, more up to date, but we might say also that recent graduates know more particularly the doctors' latest technic. The successful nurse realizes fully how little she was taught, the risks her patients ran because of how little she had to offer in an emergency, except and if she had common sense, so her every effort has been given to obtaining better teaching of the present-day nurses. I was one of those nurses twenty years ago. People expect more of her today. She was a luxury then. Today we think she is a necessity. Private duty was almost the only field in that day. Private duty nursing is one into which anybody can drop. We have many splendid women in private duty nursing, but it is a field into which anybody can go and no one passes on her qualifications. At the recent meeting of the National League of Nursing Education, which is now the educational department of the American Nurses Association, the board of directors went on record as desiring to work with the American Medical Association and the American Hospital Association, not only toward the improving of nursing schools but in solving such other problems as are involved in giving adequate nursing care to the sick. These associations can accomplish little without the public. Lay people must be back of our registries as well as on school of nursing committees. We need both the public and the physicians and we need to work together.

DR. GEORGE S. STEPHENS, Winnipeg, Manit.: The statement was made that "hospital administrators should not try to control nursing, which is a profession capable of self defense and self control." The hospital administrator is not a director. He also has to take orders and accept responsibility for everything that goes on. Boards of trustees a few years ago were educated to the point that there was a shortage of nurses. Advertisements appeared in some quite good magazines. Moving picture demonstrations were put on showing the happiness side of the nurse's life. Hospitals that had no trouble in obtaining students were wont to boast about it. There was considerable pride in recording record classes of students. We did a good deal of boasting when we had a class of 96. There were no protests at that time, and that isn't so very long ago. It takes time to get back to the other attitude. One point in Dr. Munger's paper that will bring it back more quickly than anything else, from an instructional point of view, is his suggestion of collecting data concerning employment among the alumni of one's own school. We have been doing that. The figures, for the last two years, are tragic. Probably a similar story can be told from north to south and from east to west. The immediate solution is to cut down classes and do much along the lines that have been suggested here today. This is the most harmonious nursing session that I have ever attended. I wish I had something with which I could disturb it. Postgraduate work should be seriously taken into consideration. A year of postgraduate work in the hospital or university might be made a requisite to graduation. Any plan such as this should be safeguarded against its being used as a purely economic program without giving a compensatory value to the nurse. I disagree with certain suggestions that students be limited entirely to the employment absorbability of the community. I think that there are a certain number who wish to take it up as an education, not necessarily as a vocation, though probably in the back of their minds they propose to have it as a backlog in case of adversity. I consider that medical education can fit unfitted medical students, in most cases, for almost any other vocation except the practice of medicine.

DR. E. P. LYON, Minneapolis: Nursing is the only profession that is left in the apprenticeship system. It has been said here today repeatedly that the hospital superintendent controls nursing education. I have to conclude that the whole system, with the changes that have been going on in all the professions relating to health, except nursing, has come to be educational institutions under the control of the professions concerned. Either that is wrong or else you are an anachronism and failure so far as educational advances are concerned.

DR. AUSTIN A. HAYDEN, Chicago: I wish to take exception to some of the things that Miss Eldredge said when she observed that any one, any nurse, implying any unsuccessful nurse, in hospital administration could go into private duty. I think that in the past the medical profession and the public have looked, and if the nurses are wise they will join these two groups in continuing to look, to the chief work of a nurse as in the sickroom. Only a small percentage of your members will ever be hospital administrators or organization women by profession. Why stress the importance of training and making way for them? Why not emphasize the duty on which most of you depend for a living, the care of the private patient? I hope nursing will always devote the majority of its thought and its time to that one particular thing. Much has been said about the overcrowding of nurses. Well, you knew it five years ago and the doctors knew it, but nothing was done about it. That is a condition that is observed in medicine all over the world, and the thing that is happening in medicine is happening in nursing. The better schools are refusing to overload their courses, and in many instances those who are refused are moving out into the less desirable hospital situations. The same is true in medical schools. From Columbia University I learned last night that out of a class of 325 excellently prepared medical applicants it was possible to accept, of their own graduates, only 35 for their medical schools. The rest sought entrance into other schools. It is high time that nursing, physicians and the public do something and in a drastic way, about the curtailment of the number of women who apply for nursing education.

SISTER GERALD, Chicago: I agree with what Dr. Hayden has said about the curtailment of the number of students entering schools of nursing. Nursing is not safeguarded as is the profession of medicine or many of the other professions. Better legislation is needed in the different states. There are states today where one year of high school or its equivalent is required for admission to a school of nursing. Again, a young woman who has been found unworthy of the noble profession of nursing and who has been asked to resign from a school of nursing may go out and don a white uniform and be employed in the home and in other offices or positions that rightly belong to our graduate registered nurses. There is nothing done about it. We hear that there are going to be laws enacted, but they are not enacted. There are hundreds of positions today being held by women who are not nurses, positions that properly belong to the nursing profession. It would help the unemployment situation very much if graduate nurses came into their own and if their proper positions were sufficiently protected. I agree that nurses should be educated in the most perfect manner possible, that they should not be sacrificed or exploited in any way. Why give them the proper education and training if they don't get the recognition that places them in their proper place, allowing others who are inferior in cultural background and in education and in mental ability and everything else to take their place? I hope some day to see the profession of nursing as well protected as doctors and lawyers and dentists.

MR. PAUL FESLER: I suggest that each hospital study its own situation and see just how it works out from an economic standpoint, keeping in mind that if there is to be a school it must meet a very high standard.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Bill Introduced.—H. 346 proposes to authorize the State Bridge Corporation to issue to licensed physicians annual passes to cross over the toll bridges controlled by the corporation at a charge not to exceed $5.

Clinical Meeting.—The John A. Andrew Clinical Society opened its twenty-second annual clinic and sixteenth annual meeting, April 9, at the John A. Andrew Memorial Hospital, Tuskegee Institute. The session closes today, April 15. The society was organized in April, 1918, for the advancement of Negro physicians and for the study and treatment of morbid conditions affecting thousands of needy sufferers in this section of the South. Physicians who participated in the program include:

Henry E. Lee, Houston, Texas, Ovarian Tumors.
James M. Franklin, Prairie View, Texas, Spinal Anesthesia.
Walter G. Crump, New York, Diseases of the Upper Right Quadrant.
Henry R. Butler, Jr., Atlanta, Ga., Coronary Diseases.
Louis T. Wright, New York, Fractures of the Skull and Brain Injury.
Alexander Kaye, New York, Appendicitis.
Samuel Lubash, New York, The Prostate.
Ulysses G. Dailey, Chicago, Surgical Mortality and Factors for Its Reduction.
Walter L. Bruetsch, Indianapolis, Pathology and Treatment of Neurosyphilis.
Joseph A. Robinson, Darlington, S. C., Heart Problems of Our Group: Its Challenge to the General Practitioner.
Theodore K. Lawless, Chicago, Diagnosis of the Commoner Dermatoses.
Roscoe C. Giles, Chicago, Management of Fractures of the Spine.
Willard M. Lane, Washington, D. C., Appendicitis in the Female.
John H. Hale, Nashville, Carcinoma of the Sigmoid.
May E. Chinn, New York, Aschheim-Zondek Tests for Early Pregnancy.
William L. Funkhouser, Atlanta, Preventive Medicine As It Applies to Pediatrics.
Luther C. Fischer, Atlanta, Appendicitis.
Marion C. Pruitt, Atlanta, Terminal Bowel as Focus of Infection.
Garland Norman Adamson, Chicago, Hormone Therapy in Obstetrics and Gynecology.
Charles Waymond Reeves, Atlanta, Contributions of the Negro to Medical Sciences.

In addition to other papers, several clinics were held.

ARIZONA

State Medical Meeting at Tucson, April 20-22.—The annual meeting of the Arizona State Medical Association will be held at Tucson, April 20-22, with headquarters at the Santa Rita Hotel under the presidency of Dr. Clarence Gunter, Globe. Scientific meetings will be in the Scottish Rite Temple. The following physicians are on the program:

William G. Shultz, Tucson, Cinema Demonstration of Prostatic Resection.
Harold W. Rice, Morenci, gas gangrene.
Eugene A. Gatterdam, Jr., Phoenix, Oral Administration of Pollen Extract in Hay Fever Therapy.
William Warner Watkins, Phoenix, X-Ray Radiation of Acute Infections.
Harry A. Reese, Yuma, Tularemia.
Emile C. Houle, Nogales, Belated Treatment of Sequelae of Diphtheria.
Reginald J. H. Stroud, Tempe, Report of the Committee on the Costs of Medical Care.
Louis C. B. Baldwin, Phoenix, Clinical Aspects of Essential Hypertension.
John W. Flinn, Prescott, Bone and Joint Tuberculosis.
Victor S. Randolph, Phoenix, Intrapleural Pneumolysis, with Special Reference to Bilateral Pneumothorax, in the Treatment of Tuberculosis.
Walter P. Sherrill, Phoenix, Tuberculosis from the Standpoint of the Pediatrician.
Henry L. Franklin, Phoenix, Refractive Errors in Their Relation to General Medicine.
Robert Alan Hicks, Tucson, Progress Chart for the Study of Pulmonary Tuberculosis as Elaborated at the Southern Pacific Sanatorium.
Howell S. Randolph, Phoenix, a motion picture on Mechanism of Electrocardiography and the Heart Beat.
Clara S. Webster, Tucson, subject not announced.

Speakers from out of the state will include Drs. James A. Dickson, Cleveland, on orthopedics; Albert Soiland, Los Angeles, diagnosis and treatment of cancer of the breast; Gershom J. Thompson, Rochester, Minn., prostatic resection in poor risk patients, and George Franklin Farman, Los Angeles, prostatitis. The Pima County Medical Society will act as host.

CALIFORNIA

Dr. Bloomfield Appointed Acting Dean.—Dr. Arthur L. Bloomfield, secretary and professor of medicine, Stanford University School of Medicine, San Francisco, has been acting dean of the school since the death of Dr. Henry S. Mehrtens.

History of Science Club.—The History of Science Club was recently organized at the University of California in Berkeley to increase the interest in the history of science which had been stimulated by the visits in 1930 and 1932 of Dr. and Mrs. Charles Singer from the University of London, England. Dr. Singer, lecturer in the history of medicine, has been lecturing at the University of California. The club is composed of faculty and graduate and undergraduate students.

State Board News.—Records of the California Board of Medical Examiners show that a smaller number of applications were filed and a smaller number of licenses were issued during 1932. Three revoked certificates were restored, while thirty-seven California physicians were cited to appear before the board for hearings on charges of misconduct and violation of the medical practice act. Eleven licenses were revoked by the board and thirteen physicians were placed on probation, while three cases were dismissed.

Committee on Physical Therapy.—The council of the California State Medical Association recently appointed a special committee on physical therapy to survey the present practice of physical therapy with reference to education and practice. A report is to be made at the next meeting of the state medical association. Members of the committee include Drs. John S. Hibben, chairman, Pasadena; Rodney F. Atsatt, Santa Barbara; Harry Leslie Langnecker, San Francisco; Charles L. Lowman, Los Angeles, and Howard C. Naffziger, San Francisco.

COLORADO

Bill Introduced.—S. 370 proposes to require all applicants for licenses to practice any form of the healing art, as a condition precedent to examination by their respective professional boards, to pass examinations in anatomy, physiology, chemistry, bacteriology and pathology, to be given by a board of basic science examiners, no member of which may be engaged in the practice of the healing art.

Health at Denver.—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended April 1, indicate that the highest mortality rate (19.4) appeared for Denver, and the rate for the group of cities as a whole, 11.3. The mortality rate for Denver for the corresponding period last year was 15.1, and for the group of cities, 13.5. The annual rate for eighty-five cities for the thirteen weeks of 1933, was 12.3, as against a rate of 12.7 for the corresponding period of the previous year. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

Society News.—The proposed gift of the Agnes Memorial Sanatorium, Denver, to Colorado as a state tuberculosis sanatorium was discussed at a joint meeting, February 21, of the Colorado Tuberculosis Association, the Denver Sanatorium Association, the El Paso County Sanatorium Association and the Denver County Medical Society. Speakers at this meeting included Drs. Harry J. Corper and Frank B. Stephenson of Denver. Clarence Rufus Rorem, Ph.D., Chicago, was to be the guest of honor at the closing banquet.——The Clinical and Pathological Society was host to the Medical Society of the City and County of Denver, March 7; speakers included Drs. Casper F. Hegner on "Metastatic Carcinoma with X-Ray of Pelvis and Cranium," and John M. Foster, Jr., "Massive Hemothorax."——Dr. Isaac L. Gotthelf, Sagauche, was elected president of the San Luis Valley Medical Society at its recent annual meeting in Alamosa.

FLORIDA

Safety Campaign Shows Results.—The safety campaign, carried on by the Duval County Medical Association, Jacksonville, is credited with a decrease in automobile accidents in February, it is reported. In this month there were 6 per cent fewer automobile accidents than in February, 1932.

Hospital News.—The Florida Hospital Association held its fifth annual convention in Ocala, March 27. Dr. Bert W. Caldwell, executive secretary, American Hospital Association, Chicago, addressed the dinner meeting on "The Program of the American Hospital Association in Reference to Current Hospital Problems."

Funds for Free Vaccines Exhausted.—City health departments are confronted with the problem of supplying diphtheria, typhoid and smallpox vaccines, a recent report indicated. It has been the custom of the state board of health to provide local departments with antitoxins to be given free to the indigent, but funds for this purpose have been exhausted, it was announced.

Society News.—At a meeting of the Dade County Medical Society, Drs. Carleton Deederer, Miami, spoke on "Treatment of Complete Suppression of Urine, as in Bichloride Poisoning"; Jesse Raymond Graves, Miami, "Present Influenza Epidemic, with Discussion of Complications," and Percy L. Dodge, Miami, "Sensory Aphasia."——Dr. Rudolph W. Holmes, Chicago, addressed the Hillsborough County Medical Society, February 7, on cesarean section.

Memorial to Dr. Helms.—More than 100 friends of the late Dr. John S. Helms, Tampa, met, January 10, to organize a memorial association. Peter O. Knight, LL.B., was elected president; Dr. Henry Mason Smith, vice president, and Dr. Bundy Allen, secretary. The consensus was that the most suitable type of memorial would be a portrait of Dr. Helms in bronze to be placed in a public park. Dr. Helms died, July 24, 1932. He had served as a member of the House of Delegates of the American Medical Association, and was a past president of the Florida Medical Association and the Hillsborough County Medical Society.

IDAHO

Personal.—Dr. Joseph Fremstad, Burley, has been appointed physician of Cassia County; Dr. Charles B. Beymer, Burley, health officer, and Dr. Chester I. Sater, Malta, sanitary officer.——Dr. William R. Abbott, Ririe, has been appointed physician of Bonneville County.

ILLINOIS

Bill Introduced.—S. 380 proposes to authorize any court before which a personal injury action is pending to require the plaintiff, at the defendant's expense, to submit to a physical examination by one or more physicians, selected by the court.

Tumor Registry Established.—A centralized collection of records on malignant tumors will be available through the establishment of a tumor registry by the Peoria City Medical Society. Through the registry, all types of treatment will be followed in an effort to determine their value for future use. How tumors occur and how they are influenced by existing methods of treatment will be considered. Membership will be extended to any physician who registers a case. The activities of the registry will be guided by a board of nine members

according to Peoria *Medical News*, whose personnel will not be changed for five years, excluding changes made necessary by resignations, to preserve continuity. For the present, all records of complete histories will be kept in the laboratory of the St. Francis Hospital. A record of a patient's past treatment will be available to any physician requesting it. Each physician will follow up his own cases; for this purpose the registry will furnish him every six months a list of the cases he has registered. These records will be available for study to any member of the registry or of the medical society. Publication of papers on this material must be approved by the board, which is to meet often enough to keep in contact with the collection of material and will make an annual report to the medical society. The following physicians compose the first board: Fred H. Decker, Perry B. Goodwin, Harry B. Magee, Milton G. Bohrod, Hugh E. Cooper, Bransford L. Adelsberger, Harry A. Durkin, Clarence W. Magaret and Baxter Brown.

Chicago

Lectures on Tuberculosis.—Dr. Richard H. Jaffe, director, department of pathology, Cook County Hospital, opened the Theodore B. Sachs Lectures in Tuberculosis of the University of Illinois College of Medicine, April 3. Following are the titles of the lectures:

April 3: Histopathology of Tuberculosis.
April 5: Tuberculous Primary Complex.
April 7: The Early Generalization.
April 10: Isolated Pulmonary Tuberculosis: (*a*) The Incipient Lesion.
April 12: (*b*) Progressive Pulmonary Tuberculosis.
April 14: The Tuberculous Cavity and the Late Generalization.

Court Bans Unethical School Graduates.—Circuit Judge Thomas Taylor, Jr., rendered a decision, March 24, refusing to graduates of the Illinois College of Physicians and Surgeons the privilege of taking examinations to practice medicine in Illinois, according to the Chicago *Tribune*. The "college" is at 20 North Ashland Avenue, and its three incorporators doubled as officers, directors and students in their own classroom. The action was a mandamus suit brought by a graduate of the school to compel the state department of registration and education to give him an examination for a certificate to practice medicine. In the building in which the college is located are so-called medical organizations which ethical physicians refuse to recognize, it was stated. The three incorporators of the school, Omer C. Bader, Victor A. Piontkowski and Ewell B. Simpson, were said to be graduates of one of these organizations, called the College of Drugless Practitioners. Also in the building are the National College of Chiropractic and the Chicago General Health Service.

MAINE

Bill Enacted.—H. 1527 has become a law, prohibiting the dispensing or other distribution of veronal or barbital, except on the written prescription of a physician, dentist or veterinarian.

MASSACHUSETTS

Dr. Opie Gives Cutter Lecture.—Dr. Eugene L. Opie, professor of pathology, Cornell University Medical College, New York, will deliver the Cutter Lecture on Preventive Medicine, April 17-18, at Harvard University Medical School, Boston. His subject will be "The Epidemiology of Tuberculosis."

Society News.—Drs. Jacob Kasanin and Rawser P. Crank, Howard, R. I., among others, discussed melanosarcoma of the brain and Alzheimer's disease before the Boston Society of Psychiatry and Neurology, March 16.——At a meeting of the New England Physical Therapy Society in Boston, March 15, Drs. Dwight O'Hara, Boston, and Byron Sprague Price, New York, spoke on "Pneumococcus Lobar Pneumonia" and "Physical Treatment in Pneumonia," respectively.

MICHIGAN

Bills Introduced.—S. 106 proposes that applicants for licenses to practice any form of the healing art are not to be eligible for examination by their respective professional boards until the board of professional examiners, which this bill proposes to create, has issued them certificates of ability. Such certificates will be issued only to those applicants who are graduates of accredited high schools, have 30 semester hours of college credits in English (6 hours), biology (8 hours), chemistry (8 hours), and physics (8 hours), and who pass examinations to be given by the board in the subjects named. H. 398, to amend the medical practice act, proposes (1) to strike out that provision requiring the board of registration to be composed of five nonsectarian, two homeopathic, two eclectic, and one physio medical practitioners, and to provide only that the board be composed of ten licensed practitioners of medicine; (2) to permit the board in its discretion to waive examining those applicants who are graduates of accredited medical colleges; (3) to permit the issuance of licenses by reciprocity only to those applicants who have resided in the state at least one year preceding the date of application and who have notified the board of their intention to apply for registration at least one year prior to applying. The board in its discretion may permit an applicant, who has notified the board of his intention to apply for a license by reciprocity, to practice until his application has been acted on. The board can rescind the license of any such licentiate who does not maintain a legal residence in the state; (4) to permit the board to revoke or suspend the license of any licentiate whom, after due notice and an opportunity to defend has been accorded, a majority of the board finds guilty of grossly unprofessional or dishonorable conduct; (5) to make it a felony, instead of a misdemeanor, for any licentiate to be guilty of "unprofessional and dishonest conduct"; (6) to require licentiates to register with the county clerk of each county in which they practice, and (7) to permit courts to enjoin the unlicensed practice of medicine or drugless healing.

MINNESOTA

Bill Introduced.—H. 1628 proposes to authorize the court in any criminal case in which the sanity of the defendant is at issue to appoint from one to three expert witnesses to examine and observe the defendant and to testify as the court's witness. The defendant and the state, however, may also call expert witnesses of their own.

Personal.—Dr. John W. Bell, who has practiced in Minneapolis since 1881, observed his eightieth birthday, March 18. He is a former member of the faculty of the University of Minnesota School of Medicine, and a former president of the Hennepin County Medical Society, the state medical association and the Minnesota Academy of Medicine.——Dr. Patrick O'Hair celebrated his eighty-fifth birthday, February 25, at Waverly, where he has been in practice for fifty-two years. ——Dr. and Mrs. De Costa Rhines, Caledonia, recently celebrated their golden wedding anniversary.

NEBRASKA

Graduate Course at University of Nebraska.—The departments of medicine, neuropsychiatry and dermatology of the University of Nebraska College of Medicine, Omaha, will offer a graduate course, May 15-20, the week preceding the annual session of the Nebraska State Medical Association in Omaha. The fee for the course will be $10 and the number of students limited to thirty.

Society News.—Drs. Arthur D. Dunn and Frederick W. Niehaus, among others, addressed the Omaha-Douglas County Medical Society, March 28, on "Secretory (Renal) Anuria Treated by Decapsulation" and "Coronary Circulation in Health and Disease," respectively. The March 14 meeting was devoted to discussion of the medical economic problem.——Drs. Joseph A. Weinberg, Adolph Sachs and William H. Stokes, Omaha, presented a program before the Lancaster County Medical Society, April 4, speaking on "Lobectomy in Bronchiectasis," "Agranulopenia" and "Retinal Vessels and the Fundus in Arteriosclerosis, Hypertension and Nephritis," respectively.

NEVADA

Annual Registration Due May 1.—All practitioners of medicine and surgery holding licenses to practice in Nevada are required by law to be registered annually on or before May 1, with the treasurer of the board of medical examiners, and at that time to pay a fee of $2. Failure to pay operates to forfeit a licentiate's right to practice medicine, and his license to practice can be reinstated thereafter only on the payment of a $10 penalty.

NEW JERSEY

Bill Introduced.—S. 312, to amend the medical practice act, proposes (1) to permit a person holding a limited license to practice to be examined for a license to practice medicine and surgery if he (*a*) has completed two years of college work, including courses in French or German, chemistry, physics and biology, (*b*) has received a degree of doctor of medicine from a reputable medical college, and (*c*) is of good moral character; and (2) eliminates that provision of the act which authorizes the licensing by reciprocity of diplomates of the National Board of Medical Examiners.

Dedication of Research Laboratory.—Sir Henry Dale, director of the National Institute for Medical Research of England, will deliver the dedicatory address at the opening of a new research laboratory at the plant of Merck and Com-

pany, Rahway, N. J., April 25. Other guests of honor at the dedication will be Mr. Lammot du Pont, Wilmington, Del., president of the Manufacturing Chemists' Association; Josiah K. Lilly, chairman of Eli Lilly and Company, Indianapolis, and Dr. Hugh S. Cumming, surgeon general, U. S. Public Health Service. The State of New Jersey will be represented by Gov. Harry Moore.

NEW YORK

Bills Passed.—S. 1794 and S. 1795 have passed the senate, proposing to amend the workmen's compensation act by adding to the list of compensable occupational diseases: "poisoning by chlorine or its compounds or its sequelae; poisoning by cyanogen or any cyanide or its sequelae."

State Medical Election.—Dr. Arthur J. Bedell, Albany, was chosen president-elect of the Medical Society of the State of New York and Dr. Frederick H. Flaherty, Syracuse, was installed as president at the annual meeting in New York. Other officers elected are Drs. Ralph R. Fitch, Rochester, and Charles D. Kline, Nyack, vice presidents; Samuel J. Kopetzky, New York, speaker, and Floyd S. Winslow, Rochester, vice speaker.

New York City

Lectures on Heart Disease.—Four lectures for laymen on heart disease as a medical and social problem were given during March under the auspices of the heart committee of the New York Tuberculosis and Health Association. Speakers for the series, which was presented Tuesday afternoons, were Drs. Ernst P. Boas, on "The Problem of Heart Disease"; Irving R. Roth, "Rheumatic Heart Disease" and Edwin P. Maynard, Jr., "Heart Disease in Middle Age" and Miss Gordon Hamilton of the New York School of Social Work, "Social Factors in Heart Disease."

Columbia Offers Clinical Courses.—Columbia University College of Physicians and Surgeons will give clinical courses for graduates in medicine at St. Luke's Hospital, April 17-June 10. Classes will meet for weekly periods of two and one-half hours each. Subjects to be offered are clinical diabetes, cardiology, thyroid disease, allergy, radiographic diagnosis and arthritis. The following members of the hospital staff will be in charge of the instruction: Drs. Henry S. Patterson, Lewis F. Frissell, George M. Goodwin, Frank Warner Bishop, John J. Honan Keating, Waldo B. Farnum, Albert C. Herring, Joseph Hajek, James Ralph Scott, William Sturgis Thomas and Eric James Ryan.

Gifts to University.—Gifts and bequests totaling $124,782.84 have been received by New York University within the past three months, it was announced, March 12. Among large gifts for medical purposes are the following:

Sundry donors through Mrs. Anne Tiffany, for the Cardiac Clinic Endowment Fund, $22,500.
Carnegie Corporation, for support of the medical school, $17,500.
Lucius N. Littauer, for studies on pneumonia under Dr. William H. Park, $2,500.
Commonwealth Fund, for research on pneumonia serum, $2,166.66.
Josiah Macy, Jr., Foundation, for study of chorea, $2,000.
Mead Johnson Company, for vitamin research, $1,600.
New York Foundation, for research on infantile paralysis under Dr. Park, $1,000.
National Research Council, for study of proteins and amino acids under Dr. Bret Ratner, $500; and for investigations of function of the kidney under Prof. Robert Chambers, $500.

OHIO

Bill Enacted.—H. 241 has become a law, amending the dental practice act by (1) adding to the list of subjects in which applicants for licenses are examined diagnosis, preventive dentistry and such other subjects as the board of dental examiners may deem necessary, and (2) permitting licenses to be revoked if a licentiate (*a*) wilfully publishes grossly false, fraudulent or misleading statements of his skill or methods of treatment or practice or (*b*) is found guilty of employing an unlicensed person to perform dental operations.

PENNSYLVANIA

Bills Introduced.—S. 745 proposes to repeal the laws regulating the distribution and possession of narcotic drugs and to enact the uniform narcotic drug act. A. 1762 proposes to create a board of naturopathic education, examination and licensure and to regulate the practice of naturopathy. A. 1742 proposes to create a chiropractic board of examination and licensure and to regulate the practice of chiropractic. Chiropractic is defined as "the adjustment by hand of any and all articulations of the spinal column."

Society News.—Dr. Morris Fishbein, Chicago, editor of THE JOURNAL, will be the speaker at the annual dinner of the Allegheny County Medical Society, Pittsburgh, April 18. His subject will be "Changes in the Nature of Medical Practice." Dr. George P. Muller, professor of clinical surgery, University of Pennsylvania School of Medicine, Philadelphia, will conduct a clinic in the afternoon preceding the dinner. ——Dr. James L. Cornely, Philipsburg, addressed the Clearfield County Medical Society, Clearfield, March 16, on "Advances of Medicine in 1932."——Dr. Eldridge L. Eliason, Philadelphia, addressed the Erie County Medical Society in March, on surgery in diabetes.——Drs. Arthur C. Morgan, Philadelphia, and Vincent Pisula, Everson, were speakers at a meeting of the Fayette County Medical Society, Uniontown, April 6, on "Medical Economics—The Committee on Costs of Medical Care" and "The Profit and Loss Accounts of Modern Medicine," respectively.——Charles A. Gill, superintendent of the Hospital of the Protestant Episcopal Church, Philadelphia, was chosen president-elect of the Pennsylvania Hospital Association at the annual meeting in Philadelphia, March 22. Among speakers at the meeting were Drs. Sigismund S. Goldwater, New York, on group practice in hospitals and Donald C. Smelzer, Philadelphia, on state provision for the tuberculous.

Philadelphia

Award to Dr. Flick.—The tenth annual Strittmatter Award of the Philadelphia County Medical Society, was presented to Dr. Lawrence F. Flick, March 22, in recognition of his work on the pathology and treatment of tuberculosis during fifty-four years of practice. Dr. Flick was unable to be present because of illness, and the medal was accepted by his son, Dr. John B. Flick, together with an illumined scroll bearing the citation. Dr. Charles F. Nassau, president of the society, presided and Dr. Basil R. Beltran, chairman of the award committee, made the presentation. Dr. Isadore Strittmatter, founder of the award, reviewed Dr. Flick's career, which has included rôles in every important antituberculosis movement in Pennsylvania, it was said. He was medical director of Henry Phipps Institute for the Study of Tuberculosis before it was affiliated with the University of Pennsylvania, having given up that position because of his health. Born in Cambria County, Dr. Flick was graduated from Jefferson Medical College in 1879. He has received honorary degrees from his alma mater and from the Catholic University of America, Villanova College and St. Vincent College. In 1920 he received the Laetare Medal, awarded annually by Notre Dame University. Presentation of the award to Dr. Flick was made jointly with the delivery of the third annual Da Costa Oration. Dr. Walter E. Dandy, adjunct professor of neurologic surgery, Johns Hopkins University School of Medicine, Baltimore, delivered the address on "Diagnosis and Treatment of Tumors of the Brain." Preceding the oration Dr. Dandy was a guest at a banquet celebrating both events. The Da Costa Foundation for graduate teaching, which sponsors the annual orations, was established April 30, 1930, in honor of Dr. J. Chalmers Da Costa, for many years Samuel D. Gross professor of surgery at Jefferson Medical College. Dr. Da Costa is now an invalid.

SOUTH CAROLINA

Bill Introduced.—S. 770 proposes to repeal the laws regulating the possession and distribution of narcotic drugs and to enact the uniform narcotic drug act.

Bill Passed.—S. 435, to repeal an act approved April 6, 1932, requiring that any poison offered for sale, resembling commonly used foodstuffs, be discolored so as to be readily distinguished from any food by casual glance, has passed the senate and the house.

State Medical Meeting at Spartanburg.—The eighty-fifth annual session of the South Carolina Medical Association will be held in Spartanburg, April 18-20, under the presidency of Dr. James R. Young, Anderson, with headquarters at the Cleveland Hotel. Guest speakers will be Drs. Olin West, Chicago, Secretary and General Manager, American Medical Association; William D. Haggard, Nashville, Tenn., and Paul P. McCain, Sanatorium, N. C. Among South Carolina physicians who will present papers are:

Dr. Floyd O. Rodgers, Columbia, Recent Advances in X-Ray as an Aid in Diagnosis.
Dr. James Heyward Gibbes, Columbia, The Anemias.
Dr. Wesley G. Byerly, State Park, Childhood Tuberculosis.
Dr. Benjamin C. Bishop, Greenville, Relation of Focal Infection to Chronic Ill Health.
Dr. Roger G. Doughty, Columbia, Congenital Hydrocephalus.
Dr. Archie E. Baker, Jr., Charleston, Postoperative Atelectasis.

A symposium on traumatic surgery will be presented by Drs. Frank R. Wrenn, Anderson; Archibald J. Buist, Charleston; James C. McLeod, Florence, and Charles O. Bates, Greenville. Dr. Edgar A. Hines, Jr., now of Rochester, Minn., will give a paper on essential hypertension. Clinics are planned in addition to the scientific program and a public health meeting wi

be held Wednesday evening, April 19. The South Carolina Public Health Association will hold its annual meeting, April 18, with Dr. William A. Mulherin, Augusta, Ga., as guest speaker, on "Preventive Pediatrics." The president's reception and ball will be given Thursday evening, April 20.

TENNESSEE

Bills Introduced.—S. 632 proposes to accord to physicians and dentists treating persons injured through the fault of other persons liens on any judgments, claims, compromises or settlements accruing to the injured persons by reason of their injuries. H. 1020 proposes to authorize the board of medical examiners to license without examination any person who has attended a medical college for at least two years and who has practiced medicine in conjunction with a licensed practitioner for at least five years. Such a licentiate, however, may practice only in counties of not less than 16,200 population nor more than 16,300 population.

WEST VIRGINIA

Portrait Unveiled.—A portrait of Dr. John Nathan Simpson, dean of West Virginia University School of Medicine since he organized it in 1902, was recently presented to the school by the class of 1932 and other alumni of the medical school. Dr. Simpson was professor of physiology at the school from 1902 to 1920, since which time he has been professor of medicine. He was director of the hygiene laboratory of the state department of health from 1913 to 1917. He received the degree of doctor of medicine from Johns Hopkins University School of Medicine in 1902.

WISCONSIN

Physician in Congress.—Dr. Charles W. Henney, Portage, is a member of the Seventy-Third Congress. Dr. Henney was graduated from Northwestern University Medical School, Chicago, in 1910 and entered practice in Portage in 1912. He served as president of the Columbia County Medical Society from 1928 to 1930. This is said to be his first activity in politics.

Plans for Care of the Indigent.—The Rock County Board of Supervisors has adopted a plan for care of the indigent in which the patient may select his own physician in operative and confinement cases and in overflow cases which cannot be handled by the county physicians. Physicians who care for county patients are to render bills, which will be audited by a committee of physicians and approved by the county trustees. A fee schedule adopted includes the following: tonsil operations, $12 to $15, depending on hospitalization; major operations, $30; obstetric cases, $12.50 outside the hospital, $10 inside; office consultation, 50 cents; city calls, $1; major fractures, $25 to $35, excluding roentgenograms.——Dane County has recently installed a dispensary at St. Mary's Hospital, Madison, at which clinical examinations are made free by members of the county medical society, who alternate on duty. Interns and nurses are on duty at all times at the clinic. In addition, necessary house calls will be made by family physicians of indigent persons, the expenses to be paid by the county. Surgical and hospital cases will continue to be handled as before, through the Wisconsin General Hospital.—— In Outagamie County a plan was adopted whereby indigent persons are cared for by their family physicians on written authorization from the public relief commission. Statements of the services given are presented to a special auditing committee, which determines the charges considered fair. This auditing committee is composed of members of the county medical society and the relief commission. Doubtful cases are referred to a consultation committee of the medical society.

GENERAL

Occupational Fatalities Decline.—The lowest occupational fatality rate in twenty-one years' experience of the Metropolitan Life Insurance Company, 22.9 per hundred thousand, was recorded among its industrial policyholders for 1932, the *Statistical Bulletin* reports. This is considered a direct result of the decrease of activity because of unemployment in the hazardous industries. In 1931 the rate was 27.3 and in 1929, the last year of full employment, 35.9. The rate for traumatism by falls, the leading cause of industrial accidental deaths, was 3.9, a decline of 18.8 per cent for the year. Occupational automobile accidents were second in importance; traumatism by machines, third. Steam railroad accidents, formerly the leading cause of industrial accidents, were fifth in 1932.

Child Health Day.—The American Child Health Association has issued a pamphlet of suggestions for carrying out "Child Health Day" this year for state and county chairmen, community committees, county and city health departments, county medical and dental societies, and county, city and town school superintendents. A joint resolution of the Senate and House of Representatives designating May 1 as Child Health Day was adopted, May 14, 1928, in order to "awaken the people of our country to the fundamental necessity of a year-round program looking toward the protection and the development of the physical and the mental health of our children." In 1929, the Conference of State and Provincial Health Authorities of North America appointed a committee on National Child Health Day. In 1932 this committee agreed to assume full responsibility for the annual conduct of Child Health Day as directed by the conference of health authorities and to accept the continuing assistance of the American Child Health Association in the observance of May Day.

Society News.—The American committee of the International Pediatric Congress, and the American Academy of Pediatrics are arranging a group trip to the international congress in London, July 20-23, on the S. S. *Laconia*. The group will leave New York, July 7, arriving in Liverpool, July 16. Mr. Walter C. Gevers, American Express Company, 1010 Locust Street, St. Louis, is in charge of the American end of the trip.——Officers of the American Heart Association for the coming year are Drs. Stewart R. Roberts, Atlanta, Ga., president; John H. Wyckoff, Jr., New York, vice president; William D. Stroud, Philadelphia, and Harrold A. Bachmann, Chicago, treasurer. The annual meeting of the association was held in New York, February 6. The ninth annual scientific session will be held in Milwaukee, June 13.——The American Association of Railway Surgeons will hold its annual meeting in Chicago, August 10-12, instead of in November as previously announced.——Dr. Edward H. Cary, Dallas, Texas, President, American Medical Association, addressed the twenty-eighth annual convention of the Tri-State Medical Society of Louisiana, Arkansas and Texas, in Marshall, Texas, March 16, on socialization of medicine. Dr. Vesse R. Hurst, Longview, Texas, was elected president; Drs. Richard G. Granberry, Marshall, John D. Young, Shreveport, La., and Albert H. Mann, Texarkana, Ark., were chosen vice presidents, and Dr. George Patrick Quinn, Shreveport, was reelected secretary.——Dr. John O. McReynolds, Dallas, was elected president of the Pan American Medical Association at the recent meeting in Dallas. The next congress will be held on board a steamship which would visit various South American countries, starting from New York.——The Association for the Study of Allergy will hold its annual meeting in Milwaukee, June 12-13, at the Hotel Schroeder. Dr. Warren T. Vaughan, Richmond, Va., is secretary.——The twelfth annual session of the International Society for Crippled Children will be held in Wichita, Kan., April 16-19. Speakers will include Drs. Edward H. Cary, Dallas, Texas, President, American Medical Association; John P. Lord, Omaha, and Edmund V. Cowdry, Ph.D., St. Louis.

FOREIGN

Twenty-Fifth Anniversary of German Journal.—The *Zeitschrift für Kreislaufforschung*, a German publication concerned with diseases of the circulatory system, began its twenty-fifth year with the January issue. The journal has been the official publication of the German Society for Circulatory Research since the organization of the society in 1928.

Congress on Military Medicine.—The seventh International Congress on Military Medicine and Pharmacy will be held in Madrid, May 29-June 4. Subjects to be discussed are: sanitary organization of a nation in case of war and application of the regulations of the new convention at Geneva; preventive vaccination of armies; treatment of surgical emergencies at the front: tinned foods as rations, and comparative study of the organization in the land, sea and air services. Following the congress the third session of the International Bureau of Documentation of Military Medicine will be held.

Personal.—Sir Edward A. Sharpey-Schäfer, professor of physiology at Edinburgh University, Scotland, since 1899, will retire at the end of the current academic year, according to the *Medical Press and Circular*. Sir Edward, now 82 years old, has received many honorary degrees and medals from scientific societies. He was general secretary of the British Association from 1895 to 1900 and president in 1912 and is now president of the Royal Society of Edinburgh. He is widely known as the originator of the Schäfer prone pressure method of artificial respiration.——Dr. Grafton Eliot Smith, professor of anatomy in University College, London, has been appointed Fullerian professor of physiology at the Royal Institution to succeed Prof. John B. S. Haldane.

Cholera Last Summer in China.—An epidemic of cholera in China during the summer of 1932 attacked twenty-one provinces and 303 large cities. Although accurate statistics are not obtainable because China's means of collecting such information are inadequate, the Central Health Administration in Nanking estimated that 100,000 cases had been reported, with about 34,000 deaths, according to the *Chinese Medical Journal*. The epidemic was discovered in Shanghai in April and lasted till October, 4,296 cases having occurred in that city, with 318 deaths, a fatality rate of 7 per cent. As much higher death rates were reported in other cities, it was believed that the preparedness of health authorities in Shanghai, notably the use of special cholera hospitals, was responsible for the smaller number of deaths there. It was said that more than a million vaccinations were performed in the city between April and September. At Nanking the case fatality rate was reported to be 24.8 per cent (1,555 cases, with 386 deaths); in Canton, 35.3 per cent (1,093 cases with 386 deaths); in Amoy, 46 per cent (1,614 cases, with 745 deaths) and in Peiping, 79.3 per cent (493 cases with 391 deaths).

Government Services

Reduction in Veterans' Benefits

Regulations governing reductions in veterans' benefits under the new economy law were promulgated by President Roosevelt, March 31, to go into effect July 1. The regulations authorize hospital or domiciliary care, including medical treatment, for veterans suffering with injuries or diseases incurred or aggravated during war service and, with certain limitations, for veterans with non-service-connected disabilities that are permanent.

Veterans of the latter class are entitled to these benefits only if they have permanent disabilities, tuberculous or psychiatric ailments that prevent them from earning a living, if they served ninety days or more and if they have no adequate means of support. It is further provided that the pensions of veterans with no dependents who are thus maintained by the government shall not exceed $15 a month in the case of service-connected disabilities and $6 a month in non-service-connected cases. Under the World War veterans' act, veterans were entitled to hospitalization and medical care for any non-service disability so long as government facilities permitted.

Medical, surgical and dental services to ambulatory cases are restricted by another regulation to honorably discharged veterans of any war, suffering from diseases or injuries incurred or aggravated in line of duty while in active service.

Payments for disabilities incurred in war service are reduced 20 per cent under the new law. Veterans disabled in service other than war-time enlistments will receive pensions on a lower scale than those with injuries or diseases acquired in time of war. Pensions on a still lower scale are to be paid to veterans with total and permanent disabilities not incurred in service if such disabilities were not the result of misconduct and if the veterans were in service at least ninety days. No pensions are to be paid for disabilities not the result of service if the individual's income exceeds $1,000 for a single man or $2,500 for a man who is married or who has minor children. Spanish-American War veterans over 62 years old are entitled to $6 monthly for less than permanent total disability. Maximum payments for the three main classes of veterans entitled to pensions are $80, $30 and $20, respectively, except in special cases, such as loss of sight.

Emergency officers' retirement pay will henceforth be granted only to those whose disabilities resulted directly from war service and only if the disability has been rated previously as much as 30 per cent.

In the reorganization of the pension system, a new rating schedule was set up, by which only five rates of disability will be recognized: 10, 25, 50, 75 and 100 per cent. Heretofore the rating schedules have been from 10 to 100 per cent, with 1 per cent intervals.

The new program, by which veterans of all wars are placed on the same basis, goes into effect July 1 but is applicable immediately to all new claims. It is estimated that these reductions will accomplish savings to the government of approximately $400,000,000. Unofficial estimates placed the number of veterans who would be stricken from the rolls as high as 450,000. The veterans' administrator is directed to make a study to determine whether there are classes of persons who should be specifically provided for and to report before July 1. The new regulations may be modified at any time within the next two years if experience shows that changes are desirable.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 18, 1933.

The Treatment of Acute Appendicitis

In a previous letter, a discussion at the Royal Society of Medicine on the treatment of acute appendicitis was reported. The leading surgeons of the day were unable to agree as to whether operation should be performed in every case. The Fellowship of Medicine and Postgraduate Association has now held a debate on the same subject in which the leading abdominal surgeons took part. Lord Moynihan was in the chair and two surgeons had been selected to lead in support of the motion and two to lead in opposition. Mr. R. M. Vick of St. Bartholomew's Hospital moved "That in every case of acute appendicitis immediate operation is indicated." He said that operation should be performed at once in all cases in which the diagnosis had been made as certainly as was humanly possible and the condition had not subsided by the time the surgeon arrived. But doubt had again arisen because of the universal fear of operation and because not all operations were done by surgeons of experience. The mortality of appendicitis was rising, owing to the pernicious revival of expectant treatment. Within forty-eight hours the operation was always successful. But he would go further and advise operation on every inflamed appendix. What applied to adults applied a hundredfold to children. There would be no great danger and some sense in waiting if one could know what was happening, but that was impossible.

Mr. Zachary Cope opposed the motion, particularly the words "immediate" and "in every case." There were cases in which immediate operation would be disastrous. He agreed as to operation in cases in which perforation had not taken place, in cases in which there was doubt about perforation, in cases of well formed abscess, and in most children. But he did not operate in advanced peritonitis, in cases of well formed lump not getting worse, or on patients in bad general condition, in whom recuperative treatment, such as saline infusion, might make operation safe after twelve hours.

Mr. W. H. Ogilvie of Guy's Hospital, though supporting the motion, felt almost inclined to agree with Mr. Cope. There were cases in which immediate operation was unwise, but he doubted whether these were "acute"; they were subsiding when the surgeon saw them. Nor was operation advisable in bad surroundings. But he felt justified in withholding operation in only 1 or 2 per cent. Experience had impressed him with the fallibility of human judgment. With exactly the same history and signs, the appendix might be found distended with pus and about to burst, gangrenous and not distended, or apparently healthy with a little inflammation inside. Nor could he forecast what was going to happen. The real crux was the third-to-fifth day case with rising temperature and pulse. He confessed that he lacked the courage to wait. At the beginning the risks could be foretold, but as time passed the gamble became greater.

Mr. R. J. McNeill Love of Royal Northern Hospital divided the cases into four groups. All agreed that early cases demanded operation and that subsiding ones had better be left alone. The third group was that complicated by general peritonitis. The fourth group was the one needing careful consideration. The patient was seen about forty-eight hours after onset and showed some rise of temperature and pulse, local rigidity and tenderness by rectum. Operation was difficult, drainage was usually necessary, and local peritonitis might become general. On the fifth day the patient was in a negative phase of resistance and the operative mortality was about 5 per cent. Complications were encouraged by untimely operation.

Expectant treatment must be rigorously enforced—the four F's: Fowler's position, fluids only, fomentation and a four-hourly chart. Only water must be given by the mouth, and this did not mean beef tea or custard. Children must not be treated expectantly, for they had usually been given purgatives. The inflammation might subside in from 50 to 70 per cent of cases and a clean operation be performed later. An abscess might form in 25 per cent.

In closing, Lord Moynihan said that the essential point in the debate had been entirely omitted: the aperient treatment. Patients never died of appendicitis; they died of its treatment. All acute appendicitis was obstructive, and if no aperient was given no case would ever become really active. He had never seen a gangrenous perforated appendix in which an aperient was not the cause. No danger would ensue from expectant treatment if aperients were withheld and if nothing whatever—particularly water—was given by mouth. A single drop of water caused intense writhing activity of the ileocecal valve. If the case was seen early there could be no question that operation was the best treatment, and no patient ought to be lost. The question could not be answered with an absolute affirmative or negative, but only by the exercise of clinical sagacity. Only in children was the greatest expert apt to be at fault; no child should be left with his appendix for half an hour. Whatever the surgeon felt about prognosis, he must without exception operate if an aperient had been given.

The motion was carried by the small majority of 54 votes to 49. Thus the same disagreement was revealed as in the previous discussion at the Royal Society of Medicine.

Impurities in London Air

The report on atmospheric pollution, issued by the department of scientific and industrial research, shows that in spite of regulations for smoke abatement there has been little improvement in the London air in the last ten years. There is still enough smoke produced to cause a dense fog under certain atmospheric conditions. During the year 1921-1922 the average deposit of total solids over London was 284 tons per square mile, which included 25 tons of sulphates. During the current year the average has been 281 tons, which includes 41 tons of sulphates. The deposit of tar, which has gone down from 7.3 tons per square mile to 5.5 tons, is still nearly three and one-half times greater than the average for the last five years. It is suggested that the high tar deposit is due to some special pollution from domestic smoke.

The Dangers of Cheap Enamel Ware

Three outbreaks of antimony poisoning due to the use of cheap enameled receptacles are the subject of a report by the ministry of health. Antimony oxide is widely used in place of tin oxide as an opacifying agent in the enameling of hardware, on account of its comparative cheapness. The antimony can be dissolved by acids, and in all the outbreaks this took place in the preparation of lemonade. The first was at Newcastle-on-Tyne in the summer of 1928, when a local firm decided to provide cooling drinks for its employees during hot weather. The drink was made from "lemonade crystals" in white enameled buckets, in which it was allowed to stand over night. Tartaric acid in the "crystals" dissolved the enamel and presumably antimony and potassium tartrate was formed. About seventy employees took the drink and nearly all became speedily ill. The symptoms were so severe that fifty-six were taken by ambulance to the infirmary. A tumblerful of the drink was found to contain 1½ grains calculated as antimony and potassium tartrate. The second outbreak was at Folkestone in 1929. At a social gathering of 120 people the refreshments included lemonade made from sliced fresh lemons, prepared in large white enameled iron jugs. In about half an hour twenty-five or thirty persons were sick. The lemonade was found to contain antimony and the enamel of the jugs 9 per cent of antimony oxide. The jugs when sold bore labels stating: "We guarantee all articles to be perfectly safe and free from any injurious substances." This outbreak showed that the natural citric acid of fresh lemons could also dissolve a dangerous amount of antimony. The third outbreak occurred in December, 1932, in a large London hospital. At the nurses' Christmas dinner sixty-five out of seventy were seized with acute vomiting, followed by collapse in several cases. The cause was found to be lemonade prepared from fresh fruit in white enameled iron jugs. The report concludes that, as the use of antimony in place of tin has become common, the public should be warned that enameled vessels should not be used for the preparation of food or drink.

Bicentenary of the Discoverer of Oxygen

The Royal Society has celebrated the bicentenary of the birth of Dr. Joseph Priestley, scientist, philosopher and unitarian divine, who discovered oxygen. The guests at the reception included descendants of Priestley. The son of a yeoman farmer, he was trained for the ministry, which he entered. He became famous as a champion of civil and religious liberty and also cultivated science, particularly chemistry and electricity. He invented the process for the production of aerated waters and in 1774 discovered oxygen by concentrating the sun's rays with a lens on mercuric oxide and other chemicals. He wrote: "The most remarkable of all the kinds of air that I have produced is one that is five or six times better than the common air for the purpose of respiration." The credit due to Priestley for this epoch-making discovery in chemistry, which is fundamental in physiology and of great practical importance in medicine, is increased by the fact that he had no scientific training. Theology was his original province. Bentham took from him the phrase "the greatest happiness of the greatest number." In 1781 his house in Birmingham was burned down by a mob and his library and scientific apparatus destroyed, because of his sympathies with the French revolution. He found refuge in London, where he was a minister for a time. In 1794 he went to the United States, where he died in 1804. His dreams of the value of oxygen have been amply fulfilled. During 1930, 7,000 million cubic feet was supplied in cylinders alone throughout Europe and North America.

The Typhoid Carrier

The medical research council has published an important report on chronic typhoid carriers and their treatment, by Prof. C. H. Browning, assisted by Drs. Coulthard, Cruickshank, Guthrie and Smith. Typhoid and paratyphoid A and B are at present responsible only for a small part of the morbidity and mortality in Great Britain. The microbes are still widely prevalent, however, as is shown by their ready detection in town sewage. With favorable opportunities there is still the danger of epidemics. There are parts of the country from which these diseases are never wholly absent. The evidence, the council states, is overwhelming that human beings constitute the sole source of the specific bacteria and that chronic carriers form an important part of this supply. Professor Browning bases his conclusions on extensive observation. He says that few carriers become cured spontaneously and that existing arrangements for dealing with them are inadequate. The results of medical treatment have been disappointing. Surgical measures have proved satisfactory where the seat of infection could be dealt with. In 75 per cent of the cases, removal of the gallbladder has effected a cure, but the number of patients operated on is small. Professor Browning urges that any population exposed to infection should be protected as far as possible by antityphoid vaccination. But extensive vaccination of a community does not obviate the necessity for the detection and treatment of carriers.

PARIS

(From Our Regular Correspondent)

March 1, 1933.

Case of Rocky Mountain Spotted Fever in Paris

Considerable stir was produced in Paris when it was learned that Dr. Brumpt, professor of parasitology at the Faculté de médecine, had contracted in his laboratory Rocky Mountain spotted fever. His condition occasioned great anxiety when it was announced that the mortality in this disease ranged around 60 per cent. Professor Brumpt had been frequently charged with scientific missions in foreign countries. He had studied yellow fever in Senegal, French West Africa, and trypanosomiasis at Gabon, French Equatorial Africa, without becoming infected. Last year, he started out on a trip to Mexico, where he was to meet Professor Roger. He traveled through the United States to study Rocky Mountain spotted fever and its relation to exanthematous typhus. He decided to be vaccinated against spotted fever, but the first injection produced such serious reactions that he was obliged to dispense with the second injection. He nevertheless insisted on collecting some ticks (Dermacentor andersoni) to take back to Paris. On returning home, in November, he permitted guinea-pigs to be bitten by the parasites he had brought. The ticks being enclosed in a tube, he felt that he was fully protected. On Sunday, February 5, he performed a necropsy on an animal he had inoculated with Rocky Mountain spotted fever, and he must have accidentally wounded himself slightly. Eight days later he developed headache, lassitude and severe pains, and delirium, which prevented his attendants from learning how he had become infected. It was difficult, therefore, to establish a diagnosis, as no previous case of this disease had been observed in France. February 14, the patient was transferred to the Hôpital Pasteur, where three doses of typhus serum from convalescents were injected, the serums having been procured by airplane from the Institut Pasteur in Tunis, from Casablanca, and from the hygienic institute in Warsaw. It was thought that this weak serum of a disease closely resembling that of the patient might be beneficial. Possibly as the result of this medication, the patient began to improve. The delirium disappeared, and the temperature steadily declined. At present, Professor Lemierre, who is in charge of the treatment, thinks that the crisis has passed and that the patient will soon be convalescent. The students of the Faculté de médecine became excited when it was noised about that the vial containing the ticks had been carelessly broken by a laboratory assistant, that the ticks had been scattered over the laboratory, and that Professor Brumpt had been bitten. The students refused to return to the building until all the vials containing the ticks had been destroyed and the guinea-pigs that had been inoculated had been killed. The daily press announced to the public that Rocky Mountain spotted fever could not spread in France by reason of the climatic conditions, and while this argument may have had little value, it calmed the public mind.

Site of Negri Bodies in Rabies

Mr. Nicolau and Madame Kopcioniska presented recently to the Société de biologie the results of research which established the sites in the brain where the Negri bodies in rabies become localized. It has been assumed for a long time that that point is at the level of the cornu ammonis. The authors employed a strain derived from rabid dogs of Morocco, and another virulent strain derived from a Rumanian wolf, a strain the evolution of which required only from three to five days and which was said to furnish no Negri bodies. With these strains, the authors found Negri bodies in great abundance in the basal optic nucleus, which appeared to be the preferred site of the virus.

The Cost of Tuberculosis to France

Dr. Georges Brouardel and Mr. Jacques Arnaud sought to evaluate what tuberculosis costs France every year. The official statistics show 90,000 deaths annually. Tuberculosis attacks chiefly men between 20 and 55 and women between the ages of 16 and 35, at the time of their best economic production. One commonly evaluates the morbidity at a figure four or five times as great as that of the mortality. Brouardel and Arnaud, calculating the number of years of work lost and taking as the financial equivalent of a year's work 10,000 francs ($400) for men and 6,000 francs ($240) for women, estimate that the total financial loss each year is 15,000,000,000 francs ($600,000,000). These figures caused Mr. Brouardel to recommend the general introduction of preventive inoculation with B C G vaccine.

Deaths

The death of Dr. Jean Hutinel, physician to the hôpitaux de Paris and associate professor at the Faculté de médecine, from staphylococcal septicemia, at the age of 42, is announced. He was the son of Professor Hutinel, the Nestor of French pediatricians, now in retirement at the age of 86. Professor Hutinel had one other son, who was killed during the war.

The death of Dr. Georges Vitoux, who was the oldest of the French medical journalists, occurred on the street, at the age of 72. His wife had died a few days previously. He was one of the chief collaborators on the *Presse médicale* and had contributed numerous medical articles to various political journals. He was likewise the official editor of the *Bulletin de l'Académie de médecine.*

BERLIN

(From Our Regular Correspondent)

March 13, 1933.

The Cross Breeding of Races

Prof. Eugen Fischer, an authority on anthropology, recently lectured on "The Crossing of Different Races, in Relation to Intellectual Performance." The crossing of different races, of all biologic processes, has the most far-reaching results for the general development of mankind. It is not of such importance to inquire what the results are of a crossing of two individuals belonging to different races. The old conception that was widely accepted that crossbred individuals always present the defects of both parents is fundamentally false. The crossbred individuals that originally gave rise to this belief sprang from haphazard, illegitimate relations between white men and women of the colored races. Quite generally, such persons are despised and rejected by both races represented by their parents. Much greater importance attaches to the crossing of whole groups belonging to different races. The most extensive crossing of races known in Europe took place during the so-called migration of the nations, when large groups of Nordic races crossed with peoples of other European races (Alpine, Dinaric, Mediterranean, antero-Asiatic). Through the mingling of these races of equal intellectual caliber, the present-day high civilizations arose. In regions where the Nordic race is purest, it has not achieved any conspicuous cultural greatness. The highest attainments have been secured in the area in which crossing occurred. Here, for instance, the German people produced most of its musicians, poets and thinkers. Northern Europe, on the other hand, where almost pure Nordic elements are still found, has produced great statesmen, generals and organizers in commerce and industry.

The "laws" governing hereditary physical characteristics are not so difficult to discover, but the "laws" affecting hereditary mental qualities must be deduced. There is no doubt that these, as well as the former, follow the well known mendelian "laws." It is a fact that in especially fortunate crossings the crossbred

individuals have qualities that excel, by far, those of their parents. In other words, they "luxuriate," and all breeding of animals and plants is based on this capacity. Judging from the results of racial crossings, not only in Europe but also among the Japanese, it appears as if such an exuberant development of the mental qualities intelligence, temperament, disposition and character constituted the fundamental basis of European progress, after the completion of the migration of the nations.

Venereal Disease in Germany

The last official census of venereal patients established that, of 372,000 new cases of venereal disease developing annually, 280,000 were gonorrhea; so it was decided at the annual meeting of the Gesellschaft zur Bekämpfung der Geschlechtskrankheiten to take up the fight against gonorrhea with vigor. In fulfilment of this decision, Professor Frieboes and Privatdozent Philipp delivered addresses in Berlin, last December, on "The Significance of Gonorrhea as a *Volksseuche*, or Universal Contagious Disease." Medical science still lacks a specific remedy for gonorrhea, with which quickly to eliminate the danger of contagion. Chronic gonorrhea in women carries an especially grave danger of contagion, and women are especially subject to complications. In Berlin, in the age groups 15-50, 88 per cent of the men were or had been infected with gonorrhea; in Hamburg, even 109 per cent; that is to say, many had been infected two or more times, while others had been spared. The most important preventive measure is general enlightenment in regard to the spread of the disease and its consequences, together with the requirement of a medical certificate by both parties to a marriage contract. In addition, there should be clinical centers for which sufficient funds are available to permit them to concentrate more on the treatment of gonorrhea.

That the federal law pertaining to venereal diseases produces good results, from the standpoint of public health, is generally recognized. However, complaints have been received that "street walkers" in many German cities have become more numerous. The defects in the law and its inadequate enforcement are blamed for these conditions. To produce data to test the justification of these charges, Ministerialrat Schäfer collected from many sources material pertaining to the administration of justice in connection with prostitution. It was found that the present laws properly administered are adequate for keeping the streets reasonably clear of street walkers.

Traffic Privileges of Physicians

In Berlin, Breslau, Hamburg and Kiel, the local directors of the Kraftfahrer-Vereinigung Deutscher Aerzte, some time ago, induced the police departments to grant special traffic privileges to the motor vehicles of the foregoing *vereinigung*, provided they are equipped with the distinguishing insignia (pennant, placard and physician's lamp), during the performance of professional duties. Traffic officers in these cities are instructed to permit physicians whose cars bear the insignia to pass crossings with as little delay as possible. Physicians are allowed to park their cars in places prohibited to other automobilists, or they may be granted the privilege of driving through streets closed to regular traffic, in order to attend a patient.

Centenary of the Hufeland Society

The Medizinisch-Chirurgische Gesellschaft, founded in 1810 by the celebrated Berlin physician Hufeland, came to be called, a hundred years ago, the Hufeland Gesellschaft. Twenty-five years ago, a merger took place with the Demonstriergesellschaft. As the present chairman of the society, Prof. Hermann Strauss, has said, the aim of the society has been to increase the knowledge of specialists in fields in which they are not themselves active and to make known the progress in the specialties to general practitioners. With this program, the society does not compete with any other society. The present economic situation prevents the holding of ceremonies commemorative of its hundredth anniversary. Among practitioners of note, this society is highly esteemed.

Program of the Deutscher Aerztetag

At the meeting of the Deutscher Aerztetag, organized by the Deutscher Aerztevereinsbund, to be held in Frankfort-on-Main in June, questions pertaining to eugenics will be prominent. The invited speakers are Ministerialrat Dr. Ostermann; Prof. E. Fischer, the director of the Kaiser-Wilhelm Institut für Anthropologie in Berlin, and Professor Bumke of Munich, the director of the Universitätsklinik für Psychiatrie. Dr. Brons will speak on some of the proposed changes in the requirements for recognition as specialists. A topic of great importance is charlatanry and the means of combating it. This topic will be discussed by Prof. Dr. Riecke of Göttingen and Dr. Friedheim of Berlin.

AUSTRALIA

(From Our Regular Correspondent)

Feb. 8, 1933.

The Health Problems of Tropical Australia

The tropical portion of Australia and Australia's tropical dependencies make up the largest tropical possession within the British Empire and contains a larger purely white population than any other tropical country. With the exception of a small and unimportant area in Central Australia, there is no part of the Australian tropics where the rainfall is less than 10 inches annually; in most parts it is between 20 and 30 inches. The total area of the tropical portion of Australia and Australia's tropical dependencies is 1,332,320 square miles.

The Australian tropics are of the greatest importance to the commonwealth, because they are within easy striking distance, as measured by incubation periods, of the world's largest endemic centers of smallpox, cholera and plague. The development of commercial aviation and the awakened interest of Asia in world commerce have added unsuspected significance to the geographic relationship.

THE THREE AGES

There have been three distinct periods in the settlement of the tropical part of Australia. These might be called the period of strategic dispersal, the period of economic extension with colored labor, and the postfederation period.

During the first period, which ended with the discovery of gold, garrisons were established at Melville Island, Raffles Bay and Port Essington because of the fear of the increasing commercial activities of the Dutch and the territorial hunger of the French. The soldiers at Melville Island suffered from scurvy; during the occupation of Port Essington, an outbreak of malaria occurred. Malaria had been introduced apparently by Malays from the Dutch East Indies. Records show that only those people in the immediate neighborhood of the settlement became affected. Persons engaged in exploration work suffered no ill effects from the tropical climate. There was no indigenous disease incidental to life in the northern part of Australia during the first epoch of settlement.

During the second period of settlement, natives of the Pacific islands were imported to work on the plantations of Queensland, and in the same period large numbers of Chinese were introduced; in 1891 the Chinese numbered approximately one tenth of the whole adult male population of Australia. It is to this influx of aliens that Australia owes its tropical diseases. The death rate among the Kanakas was terrific, and among the white men who dwelt in Queensland during this period it was enormously in excess of that reported in other Australian colonies.

The federation of the Australian colonies had a pronounced effect on tropical medicine and hygiene in Australia. Among important events was the annexation of British New Guinea, the establishment of the Australian Institute of Tropical Medicine, the transfer of the Northern Territory from South Australia to the commonwealth government, and the seizure of German New Guinea.

The endemic diseases of the tropical part of Australia are malaria, filariasis, hookworm disease, leprosy, various undifferentiated fevers, granuloma, yaws, various forms of ophthalmia and trachoma, food deficiency diseases, dysentery and typhoid. The problems of the native dependencies were about the same, but the morbidity and mortality figures in those countries were much higher.

MALARIA AND FILARIASIS

Malaria occurs in the northwestern part of Australia and in two areas in North Queensland. It usually affects only people who live under primitive conditions and whose food and lodging are poor. Although malaria has become comparatively unimportant in Australia, it might become a danger if there should be any sudden concentration of population in the endemic areas, or if hygienic control should be slackened.

Filariasis appears to have been introduced into Queensland with Kanaka labor in 1863. Between 1900 and 1910 the number of persons suffering from filariasis admitted to Brisbane Hospital varied between forty and sixty annually. The inland towns of Queensland beyond the coastal range were apparently unaffected. Elephantiasis was rare in Queensland. Culex fatigans, Anopheles amictus and Anopheles vigilax are carriers of filariasis. Stegomyia is apparently unable to carry the disease. There are, however, other problems presented by filariasis; the most important is that of treatment. There are no known means of preventing the complications of the disease or of determining whether any attempted attack on the worm in the body has been successful.

HOOKWORM

In Queensland, careful measures have been undertaken for the treatment and prophylaxis of hookworm infestation, and the incidence of the disease has greatly decreased; it might be stated that the problem, so far as white people are concerned, is under control. A great deal of work has still to be done among the aborigines. Infestation with Necator americanus, the common hookworm in Australia and Melanesia, is not usually directly responsible for symptoms of disease, but it causes a susceptibility to more serious diseases.

The steady increase in the number of known lepers in North Queensland and the Northern Territory is a pressing problem but one that offers hope for a ready control.

Food deficiency diseases and trachoma still mark the edge of the extension of settlement.

During the postfederation period in the history of Australian settlement, the commonwealth government established five laboratories in the tropical parts of Australia.

The fourth period in the history of tropical medicine and hygiene in Australia and its neighborhood is about to commence. The problem of this period will be mainly the settlement of men and their families on the vast tropical areas of the northern part of Australia. The successful colonization of the tropical parts of Australia, the great problem before the present generation, is essentially a problem of applied public health.

Australian Poisoning Statistics

It is customary to associate depressed business conditions with high mortality from poisoning. That there should be a marked divergence from the expected result is remarkable. As a sign that people are determined to "see things through," it is also refreshing.

The suicidal deaths from poisoning have been reduced by 25 per cent and the accidental deaths from poisoning by 47 per cent. The former is the lowest for five years and the latter for seven years. Taking both groups together, there was 1 death from these causes for 218,210 of the population and 1 for 1,899 of the total deaths. There was an even distribution of the deaths throughout the year. Age distribution shows that most male suicides occur between the ages 30 to 55, while for females the maximum falls between 15 and 34. Suicides by poisonous gas remain proportionately high.

Methods of Tonsillectomy

Australian surgical practice in methods of tonsillectomy has shown a general trend toward dissection, especially in adults, tending to displace the guillotine. The use of electrocoagulation by a few enthusiasts has occasioned in the Australian medical press a voluminous correspondence, which the editors have had some difficulty in maintaining on a strictly scientific level.

Briefly, the diathermists claim that their method is almost painless, does not involve a stay in hospital or a general anesthetic, does not result in hemorrhage, and has a sterilizing effect, which has immediate benefits on infections resulting from such a focal lesion. The advocates of more definitely surgical methods maintain that the diathermists do not know when they have destroyed "the tonsil, the whole tonsil, and nothing but the tonsil," and that the process is tedious and requires many sessions. One eminent otorhinolaryngologist collected numerous patients who had had their tonsils treated by electrocoagulation and the remnants were removed by surgical dissection. The tonsils were then histologically examined. It was found that there was an abundance of lymphoid tissue arranged in the usual tonsillar fashion. In some instances the epithelium covering the tonsil was hyperplastic and, in a few others, cultures from the depths of the removed tissue yielded pathogenic micro-organisms. The conclusions are that electrocoagulation can be used for the removal of tonsils but it has not been decided for what type of tonsillar infection it has its greatest usefulness. An accurate knowledge of the anatomy of the tonsil and a willingness to spend much time must be possessed by those who would remove tonsils by diathermy. It has been said that with this method an unskilled operator will do less harm than by any other method. This is indeed faint praise.

MOSCOW

(From Our Regular Correspondent)

March 7, 1933.

Increasing the Number of Physicians and Medical Schools

During the fifteen years of the soviet government's existence, medicine has penetrated into every corner of the country. The number of hospitals, ambulatories and dispensaries in towns and in the country is continuously increasing. The population demands qualified medical aid. That is why there is a deficiency of physicians, though their number is increasing every year. To fill this gap, the government opens hospitals and medical colleges. The first hospital-medical school has been opened in Leningrad, at the hospital named after Professor Nechaev. It must prepare physicians in two and one-half or three years, since all the students previously had some practical experience. General practitioners and surgeons for district work will graduate at this hospital school. According to the plan, 77 per cent of the hours of instruction are given to medical sciences. The course begins with anatomy, histology and chemistry and is closely linked up with practical knowledge. All the medical studies are connected with practical work in the hospital; for example, anatomy is studied synchronously with operative surgery, physiology with therapy, and so on. Thus the students enlarge their theoretical knowledge and at the same time help the hospital in its current work.

The Moscow Institute of Hematology

The Moscow state institute of clinical hematology and blood transfusion, which was founded in 1926, has clinical, experimental biologic, surgical and biochemical departments and a laboratory for standard serum preparations. The institute has become a center for clinical and experimental hematology. One of its problems is the training of specialists in hematology—clinicians, general practitioners, surgeon-hematologists and physiologists hematologically educated. During the last six years, the institute has studied the pathogenesis and etiology of the anemias. In pernicious anemia, hypoplastic reactions of the marrow were found after prolonged treatment. In 98 per cent of all cases, atrophic processes were seen in the gastrointestinal tract.

In the treatment of chronic benzene intoxication, blood transfusion gives excellent results. It is beneficial in acute cases of aniline poisoning even when coma is present. This treatment not only increases the number of red blood cells and improves oxygenation but also has a hemostatic effect because of the passing of thrombokinase in the blood from the donor to the recipient.

The institute proposed and is already using an apparatus for transfusing preserved blood. The use of blood taken from corpses is also being studied. If obtained properly, it is a valuable material. The institute uses standards for the mass determination of blood groups, prepared from ascitic fluid and exudates. The blood transfusion stations in many large hospitals are provided with those standards and apparatus, and the stations are registering donors from the local population. The donors are usually factory and mill workers, and for their blood they receive only additional food and money enough for purchasing products necessary for blood regeneration. As a result of the institute's work, the transfusion of blood has become a powerful therapeutic agent, which awaits further scientific and practical development.

Six Professors Honored

At the meeting of the All-Russian Central Executive Committee, recently, the degree of honorary science-worker was awarded to the following physicians: Profs. Alexis I. Abrikosov of the First Moscow Medical Institute, for his scientific works in the field of pathology; Prof. Nicolas N. Bourdenko, for his scientific works in neuropathology and his pedagogic work; Prof. Wladimir I. Wojachek of the Military Medical Academy, well known for his studies in otolaryngology; Prof. Ivan I. Grekov of the Second Leningrad Medical Institute, who instructed many scientific workers in the field of surgery; Prof. Alexis W. Martynov of the Moscow First Medical Institute, for his prominent surgical works and pedagogic activity, and Prof. Basil B. Cramer, for his scientific works in the field of neuropathology.

The Death of Professor Gannushkin

The death of a prominent Russian psychiatrist, Prof. Peter Borisovitch Gannushkin, was reported, February 23. He was born in 1875 and graduated in 1898 at the Medical Faculty of the Moscow University. He studied psychiatry with Emil Kraepelin in Munich and became professor of the First Moscow University in 1918. Professor Gannushkin was an active scientific and public worker. In the time of the czars he left the chair of psychiatry at the university as a protest against the reactionary politics of the minister of public education. After the October revolution he worked as director of the psychiatry clinic of the First Moscow Medical Institute, was a member of the state scientific medical council, and was a consultant of many scientific institutes and clinics. Professor Gannushkin was the editor of the *Journal of Contemporary Psychiatry*. His principal works were devoted to paranoia, epilepsy and schizophrenia.

Marriages

WALKER B. BROCK, Tallapoosa, Ga., to Miss Tempie Virginia Patterson of Roberta, February 26.

ELGIE M. HOUGHTON, Lancaster, Wis., to Miss Rose Bausch of Cassville, at Madison, in February.

HAROLD JOHN BELSON, St. Nazianz, Wis., to Miss Sally Mulhern of Milwaukee, February 28.

HENRY M. SEYMOUR ADAMS to Miss Annette Chandler, both of Atlanta, Ga., recently.

JOHN DE WITT HENDRICKS, Indianapolis, to Miss Mary Elizabeth Davis, February 20.

Deaths

John McCoy ⊕ New York; College of Physicians and Surgeons in the City of New York, Columbia University, 1895; member of the American Academy of Ophthalmology and Oto-Laryngology, American Otological Society and the American Laryngological, Rhinological and Otological Society; fellow of the American College of Surgeons; emeritus clinical professor of laryngology, University and Bellevue Hospital Medical College, and professor of otology, New York Polyclinic Medical School and Hospital; on the staffs of the New York Eye and Ear Infirmary and the French Hospital; aged 58; died suddenly, March 16, of heart disease.

William M. Spitzer ⊕ Denver; New York University Medical College, 1897; member of the House of Delegates of the American Medical Association in 1914; member of the American Urological Association and the Radiological Society of North America; fellow of the American College of Surgeons; visiting urologist to St. Joseph's, St. Anthony's and the Woman's hospitals, and the National Jewish Hospital for Consumptives; aged 57; was found dead in bed, March 17, of heart disease, while in Colorado Springs.

Earl Harvey Bruns ⊕ Colonel, M. C., U. S. Army, Denver; Miami Medical College, Cincinnati, 1903; member of the American Climatological and Clinical Association; fellow of the American College of Surgeons; entered the army as an assistant surgeon in 1905; served during the World War; was promoted through the various grades to that of colonel in 1931; aged 53; died, March 16, at the William Beaumont General Hospital, El Paso, Texas, of arteriosclerosis.

Daniel Hunter Bowman ⊕ Kenton, Ohio; Starling-Ohio Medical College, Columbus, 1911; past president of Hardin County Medical Society; served during the World War; formerly member of the board of health; on the staff of the McKitrick Hospital; aged 44; died, March 19, at the Veterans' Administration Home, Dayton, of an incised wound of the throat, self inflicted.

Frederic Colton Curtis ⊕ Albany, N. Y.; College of Physicians and Surgeons in the City of New York, Columbia University, New York, 1870; past president of the Medical Society of the State of New York and the Medical Society of the County of Albany; Civil War veteran; consultant in dermatology to the New York State Board of Health; aged 89; died, March 24.

Alfred B. De Loach ⊕ Memphis, Tenn.; Medical Department of the Tulane University of Louisiana, New Orleans, 1892; for many years secretary of the state board of medical examiners; past president of the Memphis and Shelby County Medical Society; aged 64; on the staff of the Baptist Memorial Hospital, where he died, March 17, of pneumonia and influenza.

Elmer O'Neill Peterson, Canton, Ohio; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, 1907; member of the Ohio State Medical Association and the Radiological Society of North America; served during the World War; aged 46; died, February 23, in the Aultman Hospital, of cirrhosis of the liver.

Eric Alonzo Abernethy ⊕ Chapel Hill, N. C.; University College of Medicine, Richmond, 1901; Medical Department of Columbian University, Washington, D. C., 1903; formerly physician to the University of North Carolina; served during the World War; aged 56; died, March 21, of a self-inflicted bullet wound.

George Martin Ball, New York; Medical Department of the University of the City of New York, 1893; member of

the Medical Society of the State of New York; on the staff of the New York City Children's Hospital; aged 67; died, March 21, of adenocarcinoma of the descending colon.

Hampden Sidney Lewis, Bay St. Louis, Miss.; Medical Department of the Tulane University of Louisiana, New Orleans, 1892; served during the World War; aged 65; died, March 11, in the Hotel Dieu Hospital, New Orleans, following an operation for appendicitis.

John Busby, Spokane, Wash.; McGill University Faculty of Medicine, Montreal, Que., 1891; member of the Washington State Medical Association; aged 64; on the staff of the Sacred Heart Hospital, where he died, March 9, of cerebral hemorrhage.

Wales Averill Haas, Boulder City, Nev.; University of California Medical School, San Francisco, 1926; member of the Nevada State Medical Association; on the staff of the Six Companies, Inc., Hospital; aged 35; died, in March, of acute appendicitis.

Ethel Mary Lyon Heard, Houston, Texas; Woman's Medical College of Pennsylvania, Philadelphia, 1905; served during the World War; formerly instructor in gynecology, University of Texas School of Medicine, Galveston; aged 56; was found dead in bed, March 10, of mitral insufficiency.

John Edward Dewar, Minneapolis; McGill University Faculty of Medicine, Montreal, Que., Canada, 1896; member of the Minnesota State Medical Association; served during the World War; aged 62; died, March 15, of cirrhosis of the liver and cardiac insufficiency.

William Harriet Woods, Kerr, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1893; served during the World War; formerly on the staff of the Veterans' Administration Hospital, Legion; aged 62; died, February 9, of exposure.

Lindley Hastings Stafford, Indianapolis; Physio-Medical College of Indiana, Indianapolis, 1907; member of the Indiana State Medical Association; served during the World War; on the staff of St. Francis Hospital; aged 46; died, March 12, of heart disease.

Henry Arnold Cooke, Providence, R. I.; Harvard University Medical School, Boston, 1896; member of the Rhode Island Medical Society; for many years on the staff of the Rhode Island Hospital; aged 66; died, March 17, of bronchopneumonia.

Thadeus Earl Watkins, Collierville, Tenn.; Memphis (Tenn.) Hospital Medical College, 1912; member of the Tennessee State Medical Association; aged 46; died, February 26, in the Methodist Hospital, Memphis, of pneumonia.

Christian Bauer Kyle, Philadelphia; Medico-Chirurgical College of Philadelphia, 1906; member of the Medical Society of the State of Pennsylvania; on the staff of the Northeastern Hospital; aged 53; died, March 10, of pneumonia.

Estill Victor Wedding ⊕ Kansas City, Mo.; Louisville (Ky.) Medical College, 1895; veteran of the Spanish-American War; formerly on the staff of the Research Hospital; aged 58; died, February 7, of heart disease.

Henry Albert Russell, Fair Lawn, N. J.; Howard University School of Medicine, Washington, D. C., 1881; past president of the board of education of Superior, Wis.; aged 77; died, March 8, of heart disease.

Harry L. Williams, Flagler, Colo.; Denver and Gross College of Medicine, 1906; member of the Colorado State Medical Society; aged 52; died, March 1, in the Presbyterian Hospital, Denver, of heart disease.

Charles Herbert Perry, Flat Rock, Ind.; Hospital College of Medicine, Louisville, Ky., 1896; aged 58; died, March 10, in the Robert Long Hospital, Indianapolis, of cirrhosis of the liver and portal obstruction.

John James Atkins, New York; Loyola University School of Medicine, Chicago, 1926; aged 29; on the staff of the Morrisania City Hospital, where he died, March 4, of bronchopneumonia and pancreatic cyst.

Dennis Edward G. Taylor, Stonington, Conn.; New York Homeopathic Medical College and Flower Hospital, 1913; member of the Connecticut State Medical Society; aged 46; died, January 28, of pleurisy.

Don Melville Hooks, Binghamton, N. Y.; Medical Department of the University of the City of New York, 1893; served during the World War; aged 65; died, March 8, of diabetes mellitus and mastoiditis.

Frederick Albert Rahe, Chicago; Chicago College of Medicine and Surgery, 1913; member of the Illinois State Medical Society; aged 46; died, March 13, in the South Shore Hospital, of septicemia.

Oscar R. Meyer, Lanesville, Ind.; Kentucky School of Medicine, Louisville, 1907; member of the Indiana State Medical Association; aged 51; was found dead in bed, March 7, of heart disease.

Cornelius Edward Ware, Atlanta, Ga.; Atlanta College of Physicians and Surgeons, 1912; on the staffs of the Grady and Georgia Baptist Hospital; aged 43; died, February 2, of pneumonia.

Hugh P. Markham, Pauls Valley, Okla.; Kentucky School of Medicine, Louisville, 1887; member of the Oklahoma State Medical Association; aged 65; died, March 7, of chronic nephritis.

Robert Willis, Linden, Wis.; Hahnemann Medical College and Hospital, Chicago, 1883; Chicago Homeopathic Medical College, 1890; aged 73; died, February 4, of influenza and bronchitis.

Ben Hill Maynard, Lakeland, Fla.; Atlanta (Ga.) College of Physicians and Surgeons, 1899; aged 66; died, March 5, in the Morrell Memorial Hospital, of cardiovascular renal disease.

James C. Mewhinney, Spring City, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1883; aged 73; died, March 10, of diabetes mellitus and coronary thrombosis.

James Oliver White, Worthington, Ind.; Kentucky School of Medicine, Louisville, 1893; Keokuk (Iowa) Medical College, 1894; aged 73; died, February 13, of arteriosclerosis.

Charles Woodward, Chicago; Eclectic Medical Institute, Cincinnati, 1879; member of the Illinois State Medical Society; Civil War veteran; aged 87; died, March 14, of uremia.

John Corscaden Findlater ⊕ San Angelo, Texas; University of Oregon Medical School, Portland, 1928; aged 38; died, January 13, in a local hospital, of pneumonia.

Orison N. Falor, New Baltimore, Ohio; Columbus Medical College, 1883; aged 73; died, March 2, in the Alliance (Ohio) City Hospital, of cerebral hemorrhage.

John M. V. Wills, Corsicana, Texas; College of Physicians and Surgeons, Baltimore, 1881; Confederate veteran; aged 86; died, March 8, of arteriosclerosis.

Daniel George Lass, Ocheyedan, Iowa; Vanderbilt University School of Medicine, Nashville, Tenn., 1886; aged 75; died, February 4, of cerebral hemorrhage.

Mark K. Engell, Hyndsville, N. Y.; University of Vermont College of Medicine, Burlington, 1882; aged 71; died, March 4, of cerebral hemorrhage.

Edward Charles Thompson ⊕ Williamstown, Mass.; M.R.C.P., London, and the R.C.S., England, 1879; aged 79; died, March 6, of arteriosclerosis.

John W. Leitch ⊕ Huntingtown, Md.; College of Physicians and Surgeons, Baltimore, 1896; aged 62; died, March 4, of carcinoma of the stomach.

George F. Sauter, Newport, Ky.; Eclectic Medical Institute, Cincinnati, 1908; aged 66; died, March 4, at his home in Dayton, of arteriosclerosis.

John Porter Davis, Morristown, Tenn.; Chattanooga (Tenn.) Medical College, 1900; aged 63; died suddenly, March 3, of myocarditis.

George Alexander ⊕ Asheville, N. C.; University of Louisville (Ky.) School of Medicine, 1913; aged 47; died, March 3, of cerebral hemorrhage.

Percy Warren, Cape Elizabeth, Maine; Medical School of Maine, Portland, 1879; aged 77; died, January 24, in Portland, of myocarditis.

James P. Wortman ⊕ Crooksville, Ohio; Ohio Medical University, Columbus, 1898; aged 65; died, March 1, as the result of a fall.

John Edmund Bradshaw, Rose, N. Y.; University of Buffalo School of Medicine, 1876; aged 83; died, March 7, of acute nephritis.

Charles Earl Harris ⊕ Akron, N. Y.; University of Buffalo School of Medicine, 1925; aged 31; died, Dec. 24, 1932, of septicemia.

George Christian Wellner, Minneapolis; Rush Medical College, Chicago, 1873; aged 83; died, March 3, of pneumonia.

Otto Stephan, Cincinnati; Pulte Medical College, Cincinnati, 1902; aged 64; died, March 22, of arteriosclerosis.

Fred Tracey Nye ⊕ Irvington, Ala.; Chicago Medical College, 1881; aged 77; died, February 7, of myocarditis.

James C. Crunk, Belfast, Tenn. (licensed, Tennessee, 1889); aged 81; died, January 13.

Bureau of Investigation

ERNEST DONALD ROBERTS—IMPOSTOR

Many Physicians Have Been His Victims

Ernest Donald Roberts, alias Dr. A. L. (Jerry) Castle, alias Dr. Gwyn Chadwick, alias Dr. John Bellinger, alias Dr. George Neville, has finally received a setback. The newspapers of Columbus, Ohio, for March 22 recorded that Roberts had been arrested by the Columbus Detectives Earl Heise and Albert A. Knappenberger in connection with a bank defrauding scheme, after he had made preliminary preparations to defraud a Columbus bank.

The Bureau of Investigation first heard of Roberts' activities from Dr. M. McC. Fischer, Director of Public Health of the City of Duluth, who wrote Sept. 8, 1932, as follows:

> "One A. L. (Jerry) Castle, alias Ernest Donald Roberts, pretending to be a physician on vacation from Honolulu, recently victimized a number of Duluthians. His method of approach was through the internes of a local hospital to whom, for a period of some 3½ weeks, he was extremely gracious and whom he entertained generously and at times lavishly. Following his sudden departure, a crop of bad checks has come into bloom.
>
> "The man claims to be Welsh and to have had his training in England. He speaks English, French, German and Greek and has a foreign accent. His knowledge of medicine and of outstanding medical men is surprising and convincing even to the medical mind. His manner is extremely gracious and polite. His conversation shows him to be well conversant with music and literature as well as medicine. Among other things polo is a favorite game of his and he rides well.
>
> "The high lights of his physical appearance are fairly covered by the following: Well dressed; black mustache; dark hair; swarthy complexion; age, about thirty years; height, 5 feet, 8 inches; weight, 150 pounds; eyes, hazel gray; nose, inclined to the Roman; teeth, unusually white and even."

The essential facts given by Dr. Fischer were published as an item of Minnesota medical news in THE JOURNAL of Sept. 24, 1932. Following its publication, a letter was received from another Duluth physician—Dr. O. H. Hanson—who saw the news item and who sent us a "snapshot" of Roberts. The Bureau of Investigation had several enlarged prints made from this, as the original had to be returned. Dr. Hanson reported that he had just learned that Roberts had been putting over his schemes in Madison, Wis.

About this time a letter was received from a physician in Madison, Wis., who wanted to know what we could tell him about an individual who called himself "Dr. Gwyn Chadwick" and who was posing "as a Welsh graduate of London Medical College and of Cambridge" and who had been in Madison for two weeks attending the University of Wisconsin clinic. Our correspondent reported that the man told fantastic tales of his life in Singapore and Honolulu and had claimed to have done work at the Peter Bent Brigham Hospital in Boston, at Saranac Lake, and at Tulane University. The physician who wrote to us asked us not to publish his letter or disclose his name. From the physical description given of "Dr. Chadwick," there seemed no doubt that this was Ernest Donald Roberts, alias Jerry Castle, under another name, and this information was sent to the Madison physician, together with one of the enlarged prints of Roberts' picture. While the picture was an indifferent one, the Madison physician, and others to whom he showed the photograph, had no difficulty in identifying "Dr. Chadwick" as Ernest Donald Roberts. We learned, also from the same physician, that "Chadwick" had deposited $50 in cash in one of the smaller branch banks of Madison and two days later deposited a check for $500, supposedly on a San Francisco bank, withdrawing $200 in cash two days later. He is said to have cleared $150 by this transaction.

Nothing more was heard from this impostor until the middle of February, this year, when a letter was received from an Atlanta, Ga., attorney, Mr. Harry S. McCowen, who wrote that he was anxious to locate a man who had spent January in Atlanta and posed as "Dr. John Bellinger." Mr. McCowen stated that "Bellinger" claimed to be an Oxford graduate, talked about having maintained polo ponies, and claimed to have lived in Calcutta and various other places. The Bureau of Investigation sent Mr. McCowen one of the enlarged snapshots that we had of Roberts, and he immediately wrote back stating that he had shown the photograph to several persons who knew "Dr. John Bellinger" in Atlanta and they were all positive that this was the same man. Mr. McCowen also reported that he had turned the photograph over to a salesman for an automobile from whom "Bellinger" had obtained a Cadillac coupé. Later we received from Mr. McCowen a photograph of Roberts that had been taken at Asheville, N. C., where the impostor was alleged to have spent some weeks in the Sunset Heights Sanatorium, leaving there about March 4 "after giving a bunch of worthless checks."

Now comes the report of Roberts' arrest in Columbus, Ohio. According to the *Ohio State Journal* of March 22, Roberts is known by more than a dozen aliases and has confessed operating his fraudulent schemes in fourteen cities and admitted that he obtained money in other cities which he could not recall. The paper goes on to report that Roberts still had the Cadillac, which he admitted buying with a worthless check in Atlanta. He had in his possession a suitcase full of bank books from numerous cities! According to the same report Roberts is said to have admitted operating his schemes in Albuquerque, N. M.,

Photograph of Ernest Donald Roberts, *alias* Dr. Jerry Castle, *alias* Dr. Gwyn Chadwick, *alias* Dr. John Bellinger, *alias* Dr. George Neville, etc., etc. Roberts' victims seem to be physicians and banks with an occasional venture into the automobile field.

San Francisco, Santa Barbara and Palo Alto, Calif., Seattle, Wash., St. Louis and Kansas City, Mo., Lincoln, Neb., Dallas, Tex. and Nashville, Tenn.

Roberts was reported to have deposited $10 in the University Branch of the Ohio National Bank and to have admitted that he intended attempting his fraud scheme there. He had opened the account under the name of Jerry Cooke of Tucson, Ariz. Further, we learned from the Columbus newspaper that Roberts was born in Austria and entered the United States in 1923 at Honolulu and became naturalized in 1928. It is also stated that in 1930 he went to New York and was appointed a federal pathologist and, as such, served in the Bureau of Sugar Industries at Houma, La.

On learning of Roberts' arrest, the Bureau of Investigation immediately sent what information it had on the man to the police department of Columbus, and asked for a copy of any photograph the police might make of the impostor. Chief Kundts of the Columbus police department sent both a photograph and fingerprint classification of Roberts. The photograph is reproduced above.

On April 4 Roberts was brought back to Atlanta, Ga., by a deputy sheriff and put in jail. It is said that his trial on the worthless checks matter will come up in about thirty days. In the meantime a Honolulu paper has come to hand in which reference is made to Roberts' arrest. The article states that so far as could be ascertained Roberts had got into no trouble while in Honolulu but that after he left there inquiries came back from various places indicating that under various names he had been involved in irregularities.

Correspondence

RECENT CRITICISMS OF PSYCHOANALYSIS

To the Editor:—It is surprising that after nearly forty years it should still be so difficult to have a calm, critical attitude toward psychoanalysis. Neither the proponents nor the critics seem to have difficulty in recognizing the emotional bias of those who disagree with them, but they become indignant at any suggestion of such prejudices in themselves.

Psychoanalysts have again been accused of rejecting rational criticism as a manifestation of unconscious emotional "resistances." So far as this has been done it should indeed be condemned, for behind every argument there is an emotional factor; but it is the truth and falsehood of the argument that must be established, independent of the emotional state of the critic.

It must be admitted, however, that it is extremely difficult to answer scientifically an article in which the emotions are so intense as to obscure the rational thinking. An extreme of this type is represented by the editorial in the March issue of the *Illinois Medical Journal,* in which no criticism at all is apparent, but only the personal preferences and prejudices of the writer.

It is even somewhat difficult to believe in the objectivity of a critic whose unquestionably honest attempt to evaluate psychoanalysis (Sachs, Bernard: The False Claims of the Psychoanalyst, *Am. J. Psychiat.* **12**:725 [Jan.] 1933) is riddled with *ad personam* arguments, such as that analysts are "infantile," "unethical" and occasionally employ an "almost dishonest method of argument."

It is particularly unfortunate when such an article comes from a man from whom one might expect objective criticism. One expects a critical article to deal with methods and with findings. Dr. Sachs confuses such fundamental points as free association and interpretation. Before one discusses the validity of interpretations—which can be done only on the basis of knowledge of the material—it is necessary to comprehend clearly what interpretation means.

Unless the fundamentals are clearly comprehended, it becomes futile to attempt to deal with the superstructure and indeed profitless to argue about such admittedly problematic points as distinction between psychosis and neurosis or hypotheses as to psychic structure.

Such fundamental errors seem to lend some justification to psychoanalysts who "accuse those who object to their pet theories of ignorance."

KAREN HORNEY, M.D., Chicago.

"THE MATERNITY WARD OF THE GENERAL HOSPITAL"

To the Editor:—The contribution of Drs. DeLee and Siedentopf in THE JOURNAL, January 7, offers irrefutable evidence of the fact that institutional care of parturients is accompanied by an increased incidence of morbidity and mortality over that of the community as a whole. They ignore the fact that practically all hospitals, whether they are called "general" or are conducted for some special field of medicine or obstetrics, are subject to the same laws of human necessity—the really sick enter them—therefore, the mortality rate is higher than for the community as a whole.

When the specific cause of a disease is known (as diphtheria, varicella or tetanus), many influences operate to affect the incidence and virulence of the malady: the virulence of the bacterium, the resistance—immunity—of the individual, regional conditions, social and economic environment, climate, food and water supply, each has its weight. In such a complex problem as puerperal infections the solution is infinitely more complicated, for one is dealing with a multiplicity of diseases—not a specific entity. Puerperal infections are not preventable by a specific prophylactic therapy; puerperal infections are not curable by a specific medication. These facts are not known by the public, who believe they are subject to the same medical laws as the twenty-three or twenty-five diseases that do have a specific prophylaxis and (or) cure. Puerperal infections are preventable only by a most meticulous regard to personal cleanliness and by a sane hospital sanitation; the general principles to secure these results are universally accepted but the methods of attaining the object are not subject to specific methods.

Dr. DeLee is convinced that morbidity and mortality are lower in segregated maternities than in obstetric divisions of general hospitals. The caption of the paper and the general context of the subject matter ignore the maternity hospital except in two specific statements: "Numerous authorities agree with me that women are safer from infection at home or in a *specialized maternity building* . . ." (italics mine). Again, "Dr. Siedentopf and I collected more or less documented reports of thirty-eight epidemics of puerperal infection, of which thirty-five were in the maternity wards of general hospitals." The context is uncertain, but it is a valid inference to hold that the three other epidemics of infection must have occurred in maternity pavilions, as nothing is mentioned in the paper of epidemics occurring in the home. I question the employment of the term epidemic; for a run of a few cases of infection in a hospital hardly connotes a widespread dissemination of a disease—the term covers too much territory.

On the face of the returns, a sad reflection is cast on the much lauded segregated maternity. Three *epidemics* therein against thirty-five in the wards of general hospitals. There are many, many hundreds, running into some thousands, of hospitals which have more or less clearly marked obstetric divisions. In some the segregation is efficiently and perfectly consummated; in others, maternity cases are unjustifiably and indiscriminately mixed with all other types of hospitalized patients. In some the delivery units are isolated; in others, the confinement is conducted in the operating room without thought as to the nature of the surgical operation that preceded it. To what extent and to what degree of efficiency segregation is carried out in all hospitals accepting maternity cases is a survey worthy of the most serious consideration. For the large hospital to permit any sort of admixture of obstetric patients with those of general surgery and medicine is an indefensible practice; for the small hospital in small communities it is an economic necessity, though the expediency does not make it good practice. The sporadic case of puerperal infection in a specialized hospital and the division of a general hospital demands perfect isolation, which means that a definite suite for such patients must be allocated in another part of the hospital.

According to the report on hospitals published in THE JOURNAL last year there were enough bassinets, and therefore a presumed provision for maternity cases, on a basis of a ten day stay, to provide obstetric care for at least double the numbers who did avail themselves of the benefits of hospitalization; some 700,000 women were delivered in hospitals out of the 2,500,000 new mothers. Among all the hospitals of the United States there are but six or seven nationally known maternities (segregated pavilions); some fifteen more are of worthy consideration; some are merely locally known, and such comprise those which come within the category of private enterprises, nursing homes or "refuges." Therefore, on the face of the facts, *three epidemics of puerperal infection among seven (or twenty-one) maternities, and thirty-five epidemics among the many thousands delivered in general hospitals* do not offer convincing proof of the advantage of the special maternity pavilion over segregated wards of general hospitals. I may state that

for some years I was in charge of an obstetric division in a general hospital. I was the only officially appointed man, though some eight or ten others had the privilege of the hospital obstetric service. At first the few obstetric patients were indiscriminately placed in wards with other patients—private room patients were located next to any type of general medical or surgical patients. Later separate provisions were made for obstetric patients. In the years we never had a suspicion of an *epidemic*—and the very few sporadic cases of morbidity had a logical explanation for their cause. For the last three years and a half I have been the directing head of the maternity division in a general hospital, with adequate provisions for securing isolation for appropriate patients, and segregated from the general hospital. In 1,300 cases to date there has been but one death—of a woman who had had no prenatal care, who entered the hospital with double ablatio retinae, ablatio placentae, cardiovascular break, and marked renal and hepatic dysfunction, and who died after a two day stay in the hospital.

Drs. DeLee and Siedentopf give slight reference to the fact that postabortal infection plays its part in the loss of the 6,000 women from infection; in a report which shortly will be issued it will be shown as a result of a remarkable survey that approximately one half of all women dying from puerperal infection succumbed from the effects of an abortion. This fact alone cuts the doleful picture of the ravages of sepsis at term in two.

Again, practically no cognizance has been taken of the fact of autogenous infection and its incidence. No consideration has been given to the indubitable, if unmeasurable, factor of the absence of immunity to bacterial invasion; they certainly play important parts in all operative work, both obstetric and surgical. They are known to exist, but who can determine their rôle in infection (puerperal) when scrupulous regard to asepsis is practiced by operator and operating room personnel, and, therefore, evaluate their incidence? In my earlier years I taught my students that probably 10, even 20, per cent of puerperal infections were autogenous in origin. Of late years I have advanced the belief that a full 90 per cent had that obscure origin wherein the operator was a meticulous observer of the tenets of modern theories of asepsis and his nursing staff was imbued with the same altruistic principle. What the ratio is between autogenous and heterogenous puerperal infections throughout the country is impossible of determination, but I believe that a sufficient number of practitioners and obstetricians are inspired by a conscience and training to make a "spontaneous" origin an element worthy of serious consideration. In view of the work done in large hospitals where every facility is offered for the near acme of perfection I would hazard the belief that the majority of puerperal infections are due to conditions beyond the control of the attendants, i. e., were latent before the patients entered the hospital.

I would speed the day when child-bearing will be so safe, all possible complications and emergencies eradicated or robbed of their sting, that not one woman or her child shall be lost. Will that utopian dream be realized? I doubt it. Momentous events of life always will carry their grave hazards in every activity of life. I am optimistic enough to believe that the betterments in the future will transcend the phenomenal progress of the last fifty years.

One can heartily agree with Rock, who states that 71 per cent of preventable deaths follow operative deliveries. When these operations are justified by experience and good teaching, and are definitely indicated, the unhappy consequences are deplorable but defensible. When the same type of operations are employed without indication, or with indications so specious that they are ludicrous, when any untoward result or the eventual fatality follows, then the operator has perpetrated an inexcusable transgression against sound obstetric principles. Drs. DeLee and Siedentopf quote Rock; therefore they must subscribe to his dictum: We see 6,000 women succumb from septic infections, one half of which are the result of abortion, often criminal in cause; of these 3,000 women dying from sepsis at term, 71 per cent, 2,100 are due directly to an operation. Whether this deduction is scrupulously accurate or not, it suggests that obstetricians should limit their operative work to clearly indicated reasons. If eminent obstetricians would abstain from preaching broadcast the spurious news that routine prophylactic forceps, routine cesarean section, routine version, routine episiotomy were the acme of obstetric proficiency and would devote themselves to the inculcation of sound obstetric principles, a new era in obstetric practice and thought would be attained. As it is, too many physicians teach their patients that child-bearing is a pathologic process and delivery must be invariably consummated with the minimum of time and pain; as a result, people believe that this is the up-to-date scientific obstetric procedure. If physicians would present a united front with a clear propaganda that "polypragmatism" —a euphonious synonym for meddlesome midwifery—is irrational, is so highly dangerous that it should not be permitted, more lives would be saved than by this tirade against the general hospital as a unit in the care of the laboring woman.

The maternity pavilion, just like the segregated obstetric department of a general hospital, will subject its patients to the risks of infection unless the one as well as the other has provision for absolute isolation of all suspected and actually infected mothers and babies. The maternity pavilion may more readily secure this isolation unless the obstetric department of the general hospital has the most hearty support and cooperation of the members of the whole staff. The entire personnel of the maternity pavilion think and act with an obstetric mind and conscience. The personnel of a general staff rarely see problems from an obstetric point of view: they are inclined to attempt the application of general hospital regulation to obstetric needs. Obstetricians constantly refer to the fact that the general staff and superintendent in particular try to impose restrictions on the obstetric department which too often impose absurd results—in other words, the staff looks down on the obstetricians and does not give a whole souled cooperation.

RUDOLPH W. HOLMES, M.D., Chicago.

[The letter by Dr. R. W. Holmes was submitted to Dr. Joseph B. DeLee, who replies:]

To the Editor:—Oliver Wendell Holmes, in a similar situation in 1855, when his paper on puerperal fever was attacked in an article by Meigs, had this to say:

> There are expressions used in it which might well put a stop to all scientific discussions were they to form the current coin in our exchange of opinions.
>
> One unpalatable expression (several in this case) I suppose the laws of construction oblige me to appropriate to myself, as my reward for a certain amount of labor bestowed on the investigation of an important question of evidence, and a statement of my own practical conclusions. I take no offense and attempt no retort.
>
> Only just so far as a disrespectful phrase may turn the student aside from the examination of the evidence by discrediting or dishonoring the witness, does it call for any word of notice.

The first sentence in this criticism of our paper betrays the fact that the critic read the article somewhat hurriedly. Our paper proved that hospitalization of deliveries, normal as well as pathologic, has increased enormously in recent years, yet the maternal mortality has not decreased. Septic abortion alone cannot explain this disparity. Dr. Murphy of the United States Census Bureau could not supply me with statistics on this point—nor could Dr. Dublin of the Metropolitan Life Insurance Company.

Every one knows that the hospital is the dumping ground for dying botched obstetric patients, but the immense number of normal patients now delivered in hospitals should have absorbed these deaths and shown a balance on the credit side. However, we are still in the red. Facts are presented which prove that the deaths from puerperal infection, not deaths

from septic abortion or from botched cases dumped in, but of women who entered the hospital well, had actually increased. Siedentopf undertook this study at my request and he was prejudiced against my thesis at the start. What he found in the literature converted him.

After his presentation, I took up the word. In 1926 I had published a paper on this subject in the *Modern Hospital* magazine and was sharply criticized, as now. I answered those critics in 1927 and again in 1933. Several of the critics had suffered converting experiences in the meantime—to which I referred. I would request reperusal of these replies in my 1933 paper, to save repetition here.

I also showed that the surgical, as well as the puerperal, case suffers the dangers of cross infection.

Then I mentioned the methods of transmission of contagion, the indirect contact, direct contact and air borne (to put them in the order of their importance), ending with the history of the Chicago Lying-in Hospital, which confirmed the experiences accumulated in other hospitals. The last presentation proves that I have been purely objective in this discussion, without any personal bias.

There is nothing sacrosanct about a "special maternity hospital." If it has not a properly isolated septic pavilion it is no less dangerous than a general hospital, as see the instances cited by MacGregor and myself.

Dr. Holmes states that we give practically no cognizance to the incidence of auto-infection. But Siedentopf quotes Kinloch, Smith and Stephen as supporting Young to the effect that "auto-infection as a primary factor plays a quite unimportant part in the death rate from sepsis and that in our search for essential causes we must address ourselves to the remaining factors of contagion and trauma." Then he asks why auto-infection should occur more frequently in hospital than in home and midwife cases.

Although Jaggard in 1889 taught that "puerperal infection is always exogenous, never endogenous in origin," I am a firm believer in auto-infection; but it plays a small rôle in practice. About the time of the change of the century, a period during which our critic was attached to the institution, the Chicago Lying-in Hospital, Maxwell Street Dispensary, had a run of 3,990 consecutive deliveries without a single mother's death from any cause. Good luck, of course, when one thinks of eclampsia and placenta praevia, but there was no "auto-infection" death and we followed our cases through, including those sent to hospitals.

There are many causes for the persistence of a high maternal death rate in the world (three were mentioned in our paper). Nature herself kills many by rupture of the uterus, abruptio placentae, auto-infection, postpartum hemorrhages, eclampsia. Improper interference with nature adds to the list, and inadequacy of the attendant in the presence of emergencies too; but "one potent cause" as the Committee of the American Gynecologic Society puts it, "is puerperal infection in general hospitals," and to help to remove this cause is the single and sole object of my paper.

Do we know enough about the habits of bacteria? We do not. Recent studies are rendering shaky the very foundations of bacteriology. We still hold fast to the belief that bacteria cause disease, although how they do it may not be known.

The puerperal case cannot, must not, be compared with the surgical case. One undergoes an operation (labor) lasting from one to seventy-two hours and then has an open wound (the vulva) for at least seven days; in the other a wound is made under ideal conditions and soon closed, then sealed until it is healed. In the one the "aseptic technic" must reign for a full week or more; in the other for only an hour or two.

As I said in 1927 and again in 1933, "I will concede that if the maternity ward in the general hospital were on a completely separated floor, and that if the doctors, students, nurses, orderlies, laundrymen and maids always carried out an intelligent aseptic technic, the equivalent of that practiced in the best surgical operating rooms, while even then it would not be possible to insist it is perfectly safe to treat maternity cases under the same roof with surgical and medical cases, the element of danger would be reduced to such a minimum that the public would be willing to accept it against the expense and trouble of carrying out ideals."

The Cleveland Obstetrical Society demands "actual physical separation and entirely separate personnel for safety. Isolated separate labor and delivery rooms are necessary. The laundry of the maternity division should never be mixed with that of the medical and surgical floors, so that sheets, pillow cases, and the like that have been used by infected surgical patients cannot be sent from the laundry to the obstetric floor. No hospital has the moral right, and none should have the legal right, to accept cases for delivery without making physical and administrative preparation for their safe care." What more do I ask than this perfect separation? We differ only as to how such perfection can be attained.

Dr. Holmes concludes "the maternity pavilion, just like the segregated obstetric department of a general hospital, will subject its patients to the risks of infection unless the one as well as the other has provision for *absolute isolation of all suspected and actually infected mothers and babies* (italics mine). The maternity pavilion may more readily secure this isolation unless the obstetric department of the general hospital has the most hearty support and cooperation of the members of the whole staff. The entire personnel of the maternity pavilion think and act with an obstetric mind and conscience. The personnel of a general staff rarely see problems from an obstetric point of view: they are inclined to attempt the application of general hospital regulation to obstetric needs. Obstetricians constantly refer to the fact that the general staff and superintendent in particular try to impose restrictions on the obstetric department which too often impose absurd results—in other words, the staff looks down on the obstetricians and does not give a whole-souled cooperation."

Exactly. In our paper Dr. Siedentopf and I stated the factual results and gave the immediate causes. Our critic clinches our argument by giving the fundamental causes. It is now clear why the maternity pavilion is safer: *"The personnel of a general staff rarely see problems from an obstetric point of view."* This explains why it is impossible (1) to keep the laundry of the septic medical and surgical cases away from the obstetric ward; (2) why mattresses and pillows are not bacteriologically sterilized between cases; (3) why the dishes are not actually sterilized when used in common; (4) why the interns and nurses are allowed to go from the wards where they pick up streptococci in their throats and on their hands and carry them to the maternity; (5) why the staff will crowd around a septic postmortem and then disperse unconcernedly throughout the wards; (6) why the wall washers use the same pails and sponges all over the hospital and the orderly mops up the pus in the surgery after appendicitis operations and then mops up the birth room—and so on through the myriads of indirect contact infections. The obstetric case is different.

Experience throughout forty years has proved that most hospitals cannot or will not carry out the extreme measures necessary to produce perfect isolation. Human frailty, and incomplete knowledge of the habits of bacteria and the resistance of puerperas, make it necessary to erect actual architectural barriers in addition to those of "technic" (administrative) against contagion.

Finally, to avoid repetition, since all the objections were foreseen and answered, we wish that those who on first reading felt our position was untenable would please reread the

original article and also the three published in the *Modern Hospital* magazine (reprints will be supplied on request) and, when so doing, follow Socrates' advice "to lay aside prejudice, passion and sloth."

J. B. DELEE, M.D., Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

HABITUAL PREMATURE LABOR

To the Editor:—A woman, aged 35, has just had her fifth premature termination of pregnancy. This pregnancy had progressed about seven and one-half months, and this was the longest she has ever gone. Two years ago she went six and one-half months. In three instances in which I have followed her case she has apparently progressed in a perfectly normal manner for from four and one-half to five months. Then, while the fetal heart sounds continue, it is noted that the uterine development is much retarded. In this case, although her history was absolutely good for between seven and seven and one-half months, the uterus was not enlarged more than would be expected at the end of five and one-half months. In this instance, active fetal heart sounds were heard, November 26. She felt fetal life rather weakly, November 27. Labor pains began, December 4, with complete expulsion of the placenta and membranes on the 5th. The fetus obviously had been dead for several days. The placenta showed numerous areas of thrombosis, and undoubtedly the blood supply to the baby had been thereby restricted. The patient has been studied from practically every possible angle. Repeated Wassermann tests on both herself and her husband have been negative. Furthermore, there is no reason to suspect any syphilitic history. A few years ago a pair of diseased tonsils were removed in the hope of eliminating a possible source of infection. During one of her pregnancies there was a transitory albuminuria. She has a moderately enlarged thyroid gland, but there are no evidences, either on physical examination or as a result of basal metabolic study, to suggest toxicity. Chemical examination of the blood has given entirely normal results and examination of the blood for undulant fever has been negative. There has been a very mild secondary anemia. The patient is extremely anxious to have children, and I would appreciate any possible suggestions in the case. Please omit name.

M.D., Pennsylvania.

ANSWER.—Habitual premature labor, after viability but before term, is a discouraging condition. It has been the bane of obstetric existence for many years and the only real improvement has been in those cases in which syphilis is the cause. Naturally, if syphilis is cured the pregnancies will go to term.

In THE JOURNAL, Dec. 17, 1932, page 2134, there is a good reply to a question regarding the causation of repeated miscarriages in the early months of pregnancy to which the inquirer is referred. The present reply will cover, to some extent, the question of the causation of habitual premature labor.

The most common causes, other than syphilis, of the latter condition are infections of the cervix and endometrium, infantile uterus, latent nephritis, toxemia, and some forms of anemia. A study of every case must be made along these lines and treatment directed accordingly. A diseased cervix should be cauterized and if there is an evidence of endometritis (the "irritable uterus" of older writers) a curettage might be indicated, although little benefit is likely to accrue from it.

In infantile uterus little can be done because the uterus will grow and dilate up to a certain point, at which it becomes intolerant of its burden.

In all such cases the following treatment may be recommended:

1. The patient should have rest in bed from the third or fourth month until term: complete rest in bed, the patient not even being permitted to go to the toilet after the fifth month, and no coitus.

2. A carefully selected nonfattening diet should be given with an abundance of all the vitamins.

3. As a routine measure, small doses of iron, arsenic, mercury and iodine should be given. Even if the basal metabolism rate is normal from 6.5 to 16 mg. (from a tenth to a quarter of a grain) of thyroid, three times a day, should be given, but its action should be carefully watched.

4. The foot of the bed should be kept elevated 8 or 10 inches to relieve pelvic congestion and also the pressure of the ovum on the os, if possible.

5. At the first sign of an irritable uterus, morphine is given to stop its contractions.

Enough has not yet been learned about the hormones of the anterior pituitary and of the ovary, but it is possible that the immediate future may bring light with it, and these may be found useful in habitual premature labor.

ETHYL CHLORIDE AS ANESTHETIC

To the Editor:—How does ethyl chloride rate in safety as a general anesthetic, compared with other general anesthetics? I understand the Forsythe Dental College has used ethyl chloride in many thousands of cases without any untoward effects. Do you know anything about this?

OTTO F. DIERKER, M.D., Watertown, Wis.

ANSWER.—Ethyl chloride is not considered as safe as ether, nitrous oxide or ethylene, especially in operations requiring anesthesia of more than a few minutes' duration. It is said to be safer than chloroform, although Stoewa (*Arch. f. exper. Path. u. Pharmakol.* **166**:15, 1932) has reported experimental data to show that ethyl chloride is highly toxic for mice and that the administration of it, in concentration of 5 per cent, for one hour, causes cardiac, hepatic and renal injury, and death in from eight to fourteen days. It is wise to use a dilute vapor when administering ethyl chloride; that is, it should be given with plenty of air or oxygen. Its use is generally confined to inducing unconsciousness when anesthesia is to be accomplished with ether or for short periods of analgesia or anesthesia, as for incision of a furuncle. It is a highly inflammable agent; when it is used, caution must be exercised that it does not become ignited. For maximum safety it should be given by the open drop method, but in some cases it is given by the closed or semiclosed method. It is easily portable, and for that reason it is often chosen in preference to nitrous oxide or ethylene. It produces anesthesia quickly, and an overdose may be arrived at so quickly that the warning signs are not observed. Shields (*Canad. M. A. J.* **24**:250 [Feb.] 1931) called attention to the safety of ethyl chloride when properly administered, and its danger when improperly administered. Weller, of Forsyth Dental Infirmary for Children, Boston, says that ethyl chloride has been used in more than 130,000 cases at Forsyth in the last fifteen years, without fatalities or other untoward results.

TRAUMA AND LICHEN PLANUS

To the Editor:—A patient of mine sustained an eruption of the skin, lichen planus, two weeks after an automobile accident. Would it be logical to assume that the accident was the cause of the eruption? Kindly omit name.

M.D., Massachusetts.

ANSWER.—The cause of lichen planus is not known. There are a number of theories of its etiology, the one that has long been the favorite being that of nervous exhaustion, brought on by overwork, grief or anxiety, and often occurring in well nourished persons. This fits a large percentage of the patients with this disease; but there are a number of exceptions, so that the theory is rejected by some dermatologists.

The second in favor among the authorities is that lichen planus is a general disease due to infection. Several organisms have been nominated for this honor, but none have been found guilty thus far.

Trauma has been held responsible in some cases, but these are exceptional.

Other theories resemble those held for many diseases whose etiology has not been discovered; but they have been so seldom seen in connection with lichen planus that not much credence is given them.

An automobile accident could be held as having had something to do with the onset of the disease if either of the first three theories is credited. In the absence of any proof of the etiology, it cannot be assumed that this is a fact.

OPEN AIR AND CONDITIONED AIR TREATMENT IN TUBERCULOSIS

To the Editor:—As it has been demonstrated that the old view of ventilation (poisoning by carbon dioxide, and so on) is wrong and that overheating is the main trouble, on what grounds are patients with tuberculosis put in the open air? It cannot be to lessen respiration, for the carbon dioxide in a crowded room is of a much lower percentage than in the bronchial tract. One may reply that the cold striking the face stimulates nature's defensive forces. Then why not keep the patient in a closed room, free from dust and odors, with the temperature sufficiently cold to stimulate the defensive forces? Is it really the rest in bed, and hence rest of the lungs, that does the good, whereas it is thought to be the open air? Then why is an effort made to stimulate nature's defensive forces, when it is known that such treatment as milk injection does harm by breaking down the barriers in the lungs?

W. B. PALMER, M.D., Furman, Ala.

ANSWER.—Since it has been demonstrated that the qualities which serve to differentiate between good air and bad air are physical rather than chemical, views concerning the open air are rapidly changing. The Chicago Ventilation Commission in 1914 and the New York Ventilation Commission in 1923 demonstrated that the human body functions best when the temperature of the air is approximately 68 F., the relative

humidity is from 40 to 50 per cent, and there is slow movement of the air. There is no place on the earth's surface where these conditions constantly prevail. Therefore there is extant a widespread movement for conditioned air in the buildings where people live and work. Air properly conditioned has all the pollen and other foreign material removed by filters. During cold weather it is warmed and humidified; in hot weather it is cooled and dried to the proper humidity. There is a constant intake, whether the building is a factory, school, office building or home. The air is kept in slow circulation toward the outlet; thus, the air is pure (free from contamination); there is no question about its chemical constituents, and its physical qualities are ideal.

The conditioning of air to prevent disease, to aid in the healing of disease, and to keep the body in a good state of health has too long been neglected. The tuberculous patient has a better chance for recovery when the air which comes in contact with his body and which he breathes is properly conditioned than he does when he is forced to be exposed to and breathe air that is at one time too warm, another too cold, too dry, too moist, and always contaminated with pollens, dusts or other foreign material.

CALORIC VALUE OF BLOOD

To the Editor:—A man recently told me that he met a tribe in Africa the members of which live on blood. I doubt this. Would you kindly tell me how many calories would be derived from drinking one quart of blood?

JOSEPH HALTON, M.D., Sarasota, Fla.

ANSWER.—One quart of blood weighs approximately 1,000 Gm., or 1 Kg. Cow's blood contains approximately:

	Calories
Water, 80 per cent	
Solids, 20 per cent, including:	
Hemoglobin, 10 per cent, or 100 Gm. per quart....	× 4 = 400 (?)
Other proteins, 7 per cent, or 70 Gm. per quart....	× 4 = 280
Sugar, 0.1 per cent, or 1 Gm. per quart.....	× 4 = 4
Fatty substances, 2 per cent, or 20 Gm. per quart..	× 9 = 180
Total per quart.....	864

It is questionable, however, whether hemoglobin has a calory value in the body equivalent in any reasonable measure to that of simple, digestible proteins. Therefore, a liberal discount on the figures cited would decrease the assimilable calory value of the blood to something approximating 600 calories per quart—not widely different from that of milk of relatively low fat content.

ABDOMINAL PAIN FROM ADHESIONS IN POSSIBLY PSYCHASTHENIC PATIENT

To the Editor:—A woman, aged 31, complained of pain over an appendectomy scar. The pain is continuous but is much worse at the time of her menstrual period. Two years ago she noted pain and numbness in the right arm, which spread to the left arm and traveled upward in both arms. The pain is less in summer and worse in winter, and has been worse this winter than ever before. The pain is worse at night or whenever the hands are used. Any delicate movements of the hands occasion pain and tingling sensations. This stops around 10 a. m. During one attack, examination showed sensation to pin prick. Touch was normal, but pressure gave pain and heat sensations. Responses to heat and cold were normal, and tactile discrimination was normal. There is a slight swelling of the arms during attacks, together with a feeling that they are swollen. Attacks are much worse just before the menstrual periods, growing worse until the flow begins. Lately there has been a gradual oncoming weakness of the hands and arms. The menses began when the patient was 13 and have been irregular ever since, coming at intervals of four or six weeks. Two years ago the patient was amenorrheic for six months. She has two young children living and has had no miscarriages. Appendectomy was performed at 12 years of age. Blood pressure, temperature, pulse and respiration are normal. Pelvic examination reveals a first degree retroversion. The family history is negative except for one brother, who is in an insane asylum. I have used ovarian and thyroid medication. The former at first seemed to lessen the numbness in the arms and hands. Am I right in thinking that this is an ovarian or other glandular deficiency and in further treating the patient along such lines? Could the retroversion be responsible and am I justified in correcting this surgically as a trial in relieving her of her peculiar symptoms? Thank you for your kind answer. Please omit name.

M.D., Minnesota.

ANSWER.—Exacerbation of pain in an old abdominal scar at the time of the menses could be due to adhesions involving one or the other ovary. This could, of course, be due to adhesions found either by direct examination or by pelvic roentgenography. The associated remote symptoms occurring at the time of the menses are apparently psychogenic in nature and in connection with the family history of one brother who is in an insane asylum would point to the possibility of a psychogenic disturbance in this patient. It is entirely unlikely that the paresthesias described are due to either ovarian or other glandular deficiency, although a basal metabolism determination should be made. It would be distinctly inadvisable to do a surgical correction of a first degree retroversion, which is almost always movable. Temporary correction of this retroversion with a well fitted pessary would probably demonstrate that the retroversion has no bearing on the symptoms. This patient should have the benefit of an examination by a neurologist.

UNUSUAL PAIN IN TIBIA IN SYPHILITIC PATIENT

To the Editor:—A robust man, aged 25, otherwise in excellent physical condition, contracted a typical chancre on the penis about sixteen months ago but did not have treatment until a generalized papillary skin eruption appeared. The Wassermann and Kahn tests at this time were four plus. He had mucous patches on the glans, as well as dull headache and various other aches and pains throughout the joints. His schedule of treatment has included weekly injections of 0.6 Gm. of neoarsphenamine and a bismuth preparation in olive oil injected on the same day, for twenty weeks, at the end of which time the Wassermann and Kahn tests were both negative. Following a rest period of about two months, during which time he seemed in perfect health, both tibias began to ache and were tender. No Wassermann or Kahn tests were done at this time, but weekly injections of neoarsphenamine (0.6 Gm.) cleared up the tibia symptoms in about three weeks, although ten injections were given. Following these ten injections of neoarsphenamine, the bismuth preparation in olive oil was injected weekly for ten doses, but about two weeks after cessation of the neoarsphenamine injections, but, while he was still receiving the bismuth preparation, the aching and tenderness in both tibias recommenced and became so severe as to prevent sleep, and neoarsphenamine again cleared up these symptoms. In short, while the patient is receiving weekly injections of neoarsphenamine (0.6 Gm.) the tibias remain satisfactory, but if such treatment is missed for two or three weeks the tibias commence paining again. Different preparations of bismuth have been tried but none will control the symptoms, nor will injections of mercury. Iodides were tried but caused considerable skin eruption. I have used the bismuth preparation for several years and always previously had excellent results with it—almost as rapidly as with neoarsphenamine. So far, the patient has had about fifty injections of neoarsphenamine and about twenty-five injections of the bismuth preparation, but so far as clinical signs are concerned the neoarsphenamine is the only one that does any good. Should I continue the neoarsphenamine indefinitely? Please omit name.

M.D., Ohio.

ANSWER.—It would seem that the wise procedure in the case of this young man would be an effort at more exact diagnosis of the cause of the tibial pain rather than the too easy conclusion that because he has syphilis and neoarsphenamine gives relief the syphilis is the cause of the symptoms. Like all the arsphenamines, neoarsphenamine is capable of exerting a definite nonspecific effect in inflammatory processes and the treatment for syphilis is well known to have nonspecific effect on tibial periostitis that is not syphilitic in origin. The case as described contains no statement in regard to palpable or visible abnormalities of the affected bones and no mention of roentgenologic examination. It would seem quite inexcusable to continue indefinitely the administration of neoarsphenamine until something more nearly approximating a use of all available diagnostic facilities has been achieved. It is not inconceivable, of course, that the patient presents a treatment-resistant syphilis in which either the bismuth or the neoarsphenamine factor is therapeutically inadequate or ineffective.

GROWTH AND DEVELOPMENT OF CELLS

To the Editor:—Zoologists have shown that reproductive cells, such as the sperm, may be injured by physical and chemical agents (chemical preconceptives) so as to permit them still to retain their fertilizing power, though impairing their function to such an extent as to give rise to unhealthy and even monstrous offspring or to individuals who though otherwise apparently healthy, are deficient in fecundity and are even sterile. Is this statement true?

H. C., New York.

ANSWER.—Prof. Charles R. Stockard of Cornell University has shown that subjecting the fertilized egg to various injurious influences (various poisons or abnormal salt concentrations) in amounts that do not kill the fertilized egg may result in the development of embryos having a variety of defects. Most of these defects usually lead to the death of the embryo sooner or later, but some of them may be compatible with life, with the artificial care of the experimental laboratory. Some of Professor Stockard's work was done on fish. Much work has also been done on the fertilized eggs of the invertebrates, notably starfish and sea urchins, largely with the view of determining at what stage in development the embryo is most susceptible to injurious physical and chemical agents. There is also report of work with the injection of various poisons into the developing chick embryo.

In general, these experiments show variations in susceptibility of the developing embryo to these poisonous agents at different ages of the embryo. The unfertilized egg and the sperm of lower animals have been subjected to the action of radium, x-rays and ultraviolet rays, and development followed on subsequent fertilization. Work of this kind indicates that it is possible by these means to injure the unfertilized eggs or the

sperm so as to show defects in the embryo, without destroying the power of fertilization. But as a rule when the unfertilized egg or the sperm is subjected to injurious chemical influences, the power of fertilization or union of sperm and egg is also lost. All this work by experimental zoologists has been done on the invertebrates and on the lower vertebrates. This literature is reviewed by Joseph Needham in "Chemical Embryology" (New York, Macmillan Company, 1931, vol. 3, p. 1382).

The weight of the question raised is, of course, whether there is any possibility of danger in chemical contraceptives not sufficiently strong to destroy fertilizing power but sufficiently injurious to render the embryo defective. The investigations on the lower forms do not permit a definite answer to this question for man. It must be assumed, of course, that such contraceptives are weak enough not to injure seriously the mucous membrane of the genital tract. Furthermore, one must take into consideration the relatively short period that such solutions remain in contact with the ovum and sperm, or with the fertilized ovum in the early stages of fertilization. Marked injury by chemical means either to ovum or to sperm before fertilization seems to destroy fertilizing power quite readily. When serious injury is done to the ovum, sperm or embryo in the early stages of development, early death of the embryo is the usual consequence.

The question raised requires much further investigation for its answer.

LACTOSE IN DIABETIC DIET

To the Editor:—I wish to know whether lactose is a suitable food for diabetic patients. In replying, please go into detail as to why it is or is not suitable and compare it as a food for diabetic patients with other carbohydrates, such as sucrose and dextrose.

R. W. BELL, Washington, D. C.

ANSWER.—Lactose is a disaccharide which is split up in the body into two simpler carbohydrates, dextrose and galactose. Sucrose is also a disaccharide. In the body it gives rise to two simpler carbohydrates; namely, dextrose and levulose. Although there is a certain amount of literature showing different rates of assimilability between sucrose and lactose, for practical purposes in the treatment of diabetes they must be considered as of identical value. Lactose could replace an equivalent amount of sucrose in the diet, and in figuring a diabetic diet on the basis of any of the known formulas it would have to be calculated as 100 per cent dextrose.

CHRONIC PRIAPISM

To the Editor:—Please suggest treatment for priapism in a man, aged 50, who suffers from this condition every night. His history is good. He has had all the laboratory examinations, which seem to lead nowhere. Please omit name.

M.D., New Jersey.

ANSWER.—In the absence of leukemia and syphilis, one must also consider the possibility of a cerebrospinal condition.

Conservative measures might first be tried on the theory that there may be some local irritation present either in the prostate or in the prostatic urethra. The prostate should be gently massaged every five days with, at the same time, instillations of weak silver nitrate solutions (from 1:3,000 to 1:500) into the prostatic urethra. If the urethroscope shows a markedly enlarged verumontanum, a direct application of 5 per cent silver nitrate should be made to that part.

In case these milder measures do not succeed, one may resort to epidural injections of procaine hydrochloride in saline solutions.

WORMS IN DEAD BODIES

To the Editor:—This may give M.D., Texas, whose query appeared in THE JOURNAL, February 18, a little added information about worms in buried bodies. It is the custom among the Chinese to exhume the skeletons of their deceased ones after about five to ten years of burial. I have witnessed quite a number of these. Although I have never seen any live worms, I must admit that I have seen that the skeletons in every case, and especially the heads when the hair still adhered to the skull, were packed closely with what appeared to be the coverings or skins of maggot-like worms. These skeletons are the remains of bodies that were embalmed before burial. Please omit name.

M.D., Hawaii.

"CONTRAINDICATIONS TO SPINAL PUNCTURE"

To the Editor:—In the answer to the query on this subject in THE JOURNAL, March 25, page 989, it seems to me that there has been an important omission made in the list of contraindications to spinal puncture. The omission is "that a spinal puncture should never be done in the presence of an untreated acute syphilis because at that time the blood stream is filled with spirochetes and there is considerable possibility of artificially creating a neural syphilis" (Stokes: Modern Clinical Syphilology, 1926, p. 527).

JOHN R. BRAYTON, M.D., Indianapolis.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Milwaukee, June 12. Sec., Dr. William H. Wilder, 122 S. Michigan Blvd., Chicago.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: The *general oral, clinical and pathological* examination will be held in Milwaukee, June 13. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY: Milwaukee, June 12. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

ARKANSAS: *Basic Science.* Little Rock, May 1. Sec., Mr. Louis E. Gebauer, 1002 Donoghey Bldg., Little Rock. *Regular.* Little Rock, May 9-10. Sec., Dr. Sam J. Allbright, Box 54, Searcy. *Eclectic.* Little Rock, May 9. Sec., Dr. Claude E. Laws, 803½ Garrison Ave., Fort Smith. *Homeopathic.* Little Rock, May 9. Sec., Dr. Allison A. Pringle, Eureka Springs.

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* The examinations will be held at centers where there are five or more candidates, May 8-10, June 26-28, and Sept. 13-15. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEBRASKA: *Basic Science.* Omaha, May 2-3. Dir., Mrs. Clark Perkins, State House, Lincoln.

NEVADA: Carson City, May 1. Sec., Dr. Edward E. Hamer, Carson City.

WISCONSIN: *Basic Science.* Milwaukee, June 17. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee. *Regular.* Milwaukee, June 27-29. Sec., Dr. Robert E. Flynn, 401 Main St., La Crosse.

Missouri Reciprocity and Endorsement Report

Dr. James Stewart, secretary, State Board of Health of Missouri, reports 52 physicians licensed by reciprocity with other states and 13 physicians licensed by endorsement during 1932. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas School of Medicine	(1930),	(1931)	Arkansas
University of Colorado School of Medicine		(1931)	Mississippi
Howard University College of Medicine		(1928)	Tennessee
Emory University School of Medicine		(1928)	Georgia
Bennett Medical College, Chicago		(1914)	Iowa
Chicago College of Medicine and Surgery		(1912)	Illinois
Loyola University School of Medicine		(1922)	Illinois
Northwestern University Medical School		(1927)	Illinois,
	(1926), (1931)	Kansas, (1932)	Iowa
Rush Medical College		(1921)	Illinois
University of Illinois College of Medicine		(1931)	Illinois
Keokuk Medical College, Coll. of P. & S., Iowa		(1906)	Iowa
University of Kansas School of Medicine		(1927),	
	(1928), (1930, 2),	(1931, 6)	Kansas
Tulane University of Louisiana School of Medicine		(1923)	Arkansas,
	(1928)		Louisiana
Tulane University Medical Department		(1912)	Oklahoma
Baltimore Medical College		(1894)	Maryland
University of Michigan Medical School		(1930), (1931)	Michigan
Ensworth Medical College, Missouri		(1905)	Kansas
Washington University School of Med.		(1927)	Illinois, Michigan
Creighton University School of Medicine		(1931)	Kansas
University of Nebraska College of Medicine		(1925)	Nebraska
Miami Medical College, Ohio		(1894)	Minnesota
Univ. of Oklahoma School of Med.	(1928), (1930),	(1931)	Oklahoma
Jefferson Medical College of Philadelphia		(1929)	Illinois
Western Pennsylvania Medical College		(1900)	Ohio
University of Pennsylvania School of Medicine		(1927)	Ohio
Meharry Medical College	(1924),	(1931, 3)	Tennessee
University of Tennessee College of Medicine		(1931, 3)	Tennessee
University of West Tennessee College of Medicine and Surgery		(1915)	N. Carolina
University of Virginia Department of Medicine		(1926)	Virginia

College	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
University of Arkansas School of Medicine		(1931)	N. B. M. Ex.
Rush Medical College		(1929)	N. B. M. Ex.
Johns Hopkins University School of Medicine		(1925)	N. B. M. Ex.
Harvard University Medical School		(1930)	N. B. M. Ex.
Washington University School of Medicine		(1928, 2),	
	(1929), (1930), (1931)		N. B. M. Ex.
Columbia University College of Phys. and Surgs.		(1929)	N. B. M. Ex.
Ohio State University College of Medicine		(1927)	N. B. M. Ex.
Jefferson Medical College of Philadelphia		(1929)	N. B. M. Ex.
University of Pennsylvania School of Medicine		(1930)	N. B. M. Ex.

Pennsylvania Reciprocity Report

Mr. Charles D. Koch, secretary, Pennsylvania State Board of Medical Education and Licensure, reports 3 physicians licensed by reciprocity with other states and four physicians licensed by endorsement from Aug. 26 to Nov. 30, 1932. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Indiana University School of Medicine		(1913)	Indiana
Cornell University Medical College		(1924)	New York
Syracuse University College of Medicine		(1918)	New York

College	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Boston University School of Medicine		(1929)	N. B. M. Ex.
Harvard University Medical School		(1930)	N. B. M. Ex.
Columbia University College of Phys. and Surgs.		(1927)	N. B. M. Ex.
Woman's Medical College of Pennsylvania		(1931)	N. B. M. Ex.

Book Notices

The Child and the Tuberculosis Problem. By J. Arthur Myers, Ph.D., M.D., F.A.C.P., Professor of Preventive Medicine, University of Minnesota. With an introduction by William P. Shepard, M.D., F.A.P.H.A., Welfare Director, Western Division, Metropolitan Life Insurance Company. Cloth. Price, $3. Pp. 230, with 21 illustrations. Springfield, Ill.: Charles C. Thomas, 1932.

This small volume, although intended for parents and the public, may be highly recommended for public health officers, nurses, social service workers, and even general practitioners of medicine. It is a high grade primer on childhood tuberculosis. A pointed summary at the end of each chapter, pertinent case histories, and vividly depicted black and white silhouette illustrations of family infections of tuberculosis all serve well for emphasis. There are few people who have followed childhood infection over a longer period than Dr. Myers, and for this reason he is amply experienced to discuss the epidemiologic and clinical aspects of the disease in children or the relation of the child to the tuberculosis problem. Although certain statements may not conform to recent developments in the bacteriology, pathology and pathogenesis of tuberculosis, and certain conclusions concerning controversial subjects may be premature, the chief message of guarding the young from infection and caring for those already infected is sound doctrine and one that should be accorded the fullest support. Even the controversial material is bound to stir up constructive discussion, whether it ultimately proves correct or not. The tuberculosis problem of childhood is traced from the sources of infection, routes and portals in different ages, and the control of such infections is discussed. The finding of tuberculosis has been facilitated greatly by the tuberculin test (Mantoux) followed by a roentgen study. The proper disposal and care of patients is outlined. The various "strongholds" of tuberculous infection (in animals, families and so on) are listed and the means of eradication of these strongholds is suggested. The work closes with the means of prevention of tuberculosis in nontuberculous children and the program for the future. The binding, printing and illustrations are of the best quality. This book will do valuable service in focusing the attention on the main issues in the struggle against tuberculosis.

Die Arbeitsbehandlung: Zur Reform der Lungenheilstätten. Von Prof. Dr. Hanns Alexander, Chefarzt des Sanatoriums Agra, und Kurt Alexander, Volkswirt. Boards. Price, 5 marks. Pp. 100, with 44 illustrations, Leipzig: Georg Thieme, 1932.

In a foreword to this little book the Alexanders state that with the exception of two sanatoriums little has been done in Germany in regard to work therapy for the tuberculous. In other countries, such as England, Holland and Switzerland, work therapy has made great strides. The purpose of the book is to bring to the German reader the efforts so far made in Germany, Holland and Switzerland. Credit is given Varrier Jones of England for his establishment of the tuberculosis colony at Papworth. The Alexanders expect to consider later the work in other countries. A special chapter is given describing the development of work therapy in their own middle class sanatorium at Agra. The original work therapy of Patterson of moving piles of sand from one place to another is considered to have led into a blind alley, having had no economic value. The Alexanders distinguish occupational therapy from work therapy. The former is of psychic value to divert the patient during a long rest regimen. The latter not only has psychic value but leads to immediate and lasting economic values. Work therapy is the antidote to the invalid atmosphere so graphically described in The Magic Mountain of Thomas Mann. The point is stressed that first the right instructor and then the proper work for each patient must be found. In some institutions, after about fourteen weeks of intensive rest, the patient engages in work suitable to his taste and to his condition, beginning with one hour a day. In others, some occupation is begun, such as typewriting, while the patient is in the treatment chair. If improvement takes place, light handwork is undertaken, and lastly some occupation around the sanatorium is given. Institutions vary in the general work undertaken. One, for instance, will specialize on toy making and another on making coils for the telephone industry. The Agra institution advertises for contracts for translating books, indexing books, arranging directories, designing, correcting manuscripts, book binding, and similar work. A list is given of twelve institutions in which work therapy, from agriculture to the use of machinery, is described. Some institutions are able to finance their patients by loans to help their expenses until they can be more productive. About twenty-five pages is devoted to illustrations and on each of these appear eight pictures depicting the various phases of work employed. The efforts of these medical directors is to make their institutions industrial. There can be little doubt that, as Homer indicated, "too much rest itself becomes a pain." Yet tuberculosis is such a relapsing disease that in general more than a year of complete rest is necessary to lay the foundations for recovery. The average length of stay in the institutions described would appear to be not more than a year. While the patients are checked by physical, roentgenologic and blood examinations in regard to their ability to undertake work therapy, many must relapse under such treatment. No figures are given in regard to percentage of recoveries, or comparisons with sanatoriums in which work therapy is not prescribed. There can be no doubt regarding the psychic value of work therapy. The principle of Varrier Jones in taking patients who have first passed through sanatoriums to the Papworth colony, which is to a certain degree an industrial center, would seem to be well worth following.

British Experience With Unemployment Insurance: A Summary of Evidence Taken by the Royal Commission on Unemployment Insurance. Part 3: The Provisions of the Acts (Scope, Contributions and Benefits, and Conditions for Benefits). Monograph 9 in a Series on Social Insurance. Paper. Pp. 78. New York: Metropolitan Life Insurance Company, [1932].

The growth of British unemployment insurance is traced from the limited act of 1911 covering a little more than 2,000,000 workers with total weekly contributions in the highest class of about 15 cents and with merely assistance relief to the present one covering all earning less than about $1,200 a year, with the exception of a few special classes. These various extensions were urged by nearly all the parties involved except some employers. This scheme grew out of a voluntary system of union benefits and at first the restrictions limited the benefit to $1.70 a week, to fifteen weeks in any twelve months, and no individual could draw more than one week's benefit for any five contributions paid. The depression and continuous demands for further relief caused the expansion of various phases of the scheme and required heavy contributions from taxation. The efforts of certain provisions to stabilize employment are admitted to have failed in their purpose. The latest developments arising out of the recent royal commission report have been the introduction of the "means test" and a sharper enforcement of all restrictions. At the present time the Trade Union Congress is demanding a noncontributory scheme, and all the organizations representing the excluded industries, the most important of which are agriculture, domestic and government service and certain railroad employees, are demanding inclusion. The latest royal commission is divided, the majority insisting on economies and the minority on the necessity of at least maintaining the standards of relief previously existing.

Le rhumatisme articulaire aigü tuberculeux. Par le Docteur Jean Weill. Paper. Pp. 228. Paris: Librairie Le François, 1932.

The term "tuberculous rheumatism" was first popularized by Poncet of Lyons in 1897. He included, however, in this group chronic as well as acute cases, while Bouillaud and his school have described an acute polyarthritis or tuberculous rheumatism. The author of this book has made an extensive review of the literature, in which he has found considerable evidence to support the theory that many cases which in this country are called proliferative arthritis or, in young children, Still's disease may be allergic manifestations secondary to a tuberculous lesion elsewhere in the body. Dr. Weill has discussed the subject of acute articular tuberculous rheumatism from the standpoint of etiology, symptoms, clinical forms (which are listed as primary tuberculous rheumatism, arthralgias and secondary tuberculous rheumatism) and cardiac complications. Diagnoses in most instances were made on a basis of clinical observations. In some of the cases, however, fluid

was obtained from the involved joints and when tested by guinea-pig inoculation, after successive transmissions of lymph gland material from one guinea-pig to another, typical tuberculous lesions were obtained. Sixty-one case reports are included in the text. American readers will be surprised at the number of cardiac complications reported associated with this tuberculous rheumatism. The author has attempted to grow cultures of the organism from the blood and to transmit the disease to guinea-pigs by injection of the blood from such patients into guinea-pigs, with little success. Attempts were made to produce acute tuberculous rheumatism by injecting guinea-pigs and rabbits intravenously with emulsions of the tubercle bacilli. Only in rare instances were the joints involved. The author then attempted to sensitize certain joints by the injection of tuberculin into them and found that this procedure seemed to predispose these joints to infection by the tubercle bacilli circulating in the blood stream. After reading this book one is inclined to feel that not enough surgical and pathologic examinations of the tissues from joints affected by this so-called acute tuberculous articular rheumatism were made. Illustrations, particularly demonstrating the histopathology, would add to the value of this textbook as a reference work. American physicians interested in the subject of tuberculosis, and particularly those who are making a special study of various forms of arthritis, will find much in the book to stimulate their interest.

Management of the Sick Infant. By Langley Porter, B.S., M.D., M.R.C.S., Professor of Clinical Pediatrics, University of California Medical School, and William E. Carter, M.D., Instructor in Pediatrics; Chief, Pediatric Out-Patient Department, University of California Medical School. Fourth edition. Cloth. Price, $8. Pp. 763, with 80 illustrations. St. Louis: C. V. Mosby Company, 1932.

Four editions of this book have appeared during the past ten years. The text has been particularly popular with general practitioners of medicine because of its organization and method of presentation. It is the only book that considers the sick infant exclusively. The first part of the book takes up the symptoms of disease as they are seen in infants. The second part is a consideration of disease by systems. The third division covers the methods of treatment used in diseases of infants, including formulas, recipes and drugs. The material is covered in a concise and clear manner. The clinical method of presentation features each discussion. It is a book that general practitioners will find most useful as a reference guide in intelligent care of the sick infant.

Skin Diseases and Nutrition Including the Dermatoses of Children. By Erich Urbach, M.D., Dozent in Dermatology at the University of Vienna. Authorized English translation by Frederick Rehm Schmidt, A.B., M.D., Attending Dermatologist and Syphilologist, Alexian Brothers Hospital, Grant Hospital and United States Marine Hospital, Chicago. Cloth. Price, $7. Pp. 242, with 55 illustrations. Vienna: Wilhelm Maudrich, 1932.

This book is a record of ten years' investigation in the scientific application of dietetics to diseases of the skin. Based on the classic studies of Luithlen, it emphasizes the necessity of a biologic and chemical study of the normal and diseased skin. In the first half of the book dermatoses are considered in relation to diet with chapters on skin diseases due to malnutrition, alimentary infections and intoxications, dysfunction or disease of the digestive tract, metabolic disturbances and nutritive idiosyncrasies. Of special interest are Urbach's original ideas on nutritive allergens and his methods of determining them with nutritional experiments and specific propeptans. The author holds that the normal cutaneous and intracutaneous methods of testing are worthless in many dermatoses and that only oral administration of suspected foods gives allergic results. The underlying principle of Urbach's technic is to allow the patient to eat only such foods as have a specific propeptan available and to take these three quarters of an hour before the meal. By omission of successive propeptans and consequent return of the symptoms, the offending allergen can be detected. Practical results were obtained in cases which the author classifies as alimentary idiosyncratic eczema, lichen urticatus, and a few other dermatoses. In the second half of the book various skin disorders are taken up alphabetically and suggestions for their dietetic treatment are made. In true neurodermatitis the author finds that skin tests are of real value in diagnosis and that treatment by intradermal desensitization gives the best results. There is an excellent chapter on the Gerson-Sauerbruch and Hermannsdorfer salt-free, high-vitamin diets in the treatment of lupus vulgaris. A supplement contains some interesting food charts. Urbach's work is highly original, is based on some solid experimental and clinical evidence and must be given serious consideration in evaluating the modern trend in dietotherapy as applied to diseases of the skin. It represents an enormous amount of painstaking investigative work, both clinical and experimental. The literature pertaining to the relation of nutrition to diseases of the skin has been thoroughly covered. Only the future can decide whether Urbach's methods of treatment will supersede or merely supplement the more standard methods of dermatologic therapy. The translation of the book has been well done.

A Text-Book of Anatomy and Physiology. By Jesse Feiring Williams, M.D., Professor of Physical Education, Teachers College, Columbia University, New York City. Fourth edition. Cloth. Price, $2.75. Pp. 601, with 416 illustrations. Philadelphia & London: W. B. Saunders Company, 1932.

This edition gives evidence of intensive revision. More space has been devoted to physiology without undue elaboration of experimental detail. The introduction of B N A terminology is also an advance. The material is intended chiefly for students of the practical arts—nursing, physical education, physical therapy and occupational therapy. The author's extensive experience in teaching anatomy and physiology is reflected in the manner of presentation, choice of data and general organization. Basic and essential facts concerning structure and functions of the body are presented in a concise, orderly and logical sequence. Because the students for whom this textbook was intended usually do not have the benefit of dissection, the author has introduced numerous illustrations. The book is authoritative and especially well organized.

Physical Chemistry for Students of Biology and Medicine. By David Ingersoll Hitchcock, Ph.D., Associate Professor of Physiology in the Yale University School of Medicine. Cloth. Price, $2.75. Pp. 182, with 26 illustrations. Springfield, Ill.: Charles C. Thomas, 1932.

The recent advances in our knowledge and conceptions of the nature of biologic processes, made with the aid of the quantitative methods of physical chemistry, have been striking. Unfortunately, however, few medical students are familiar enough with the fundamental principles of this science to be able to follow the progress made. For these, and for the practitioner who is anxious to keep in touch with the advances in the fundamental medical sciences, this book should prove especially valuable. The author hasn't attempted to cover the whole field of physical chemistry but has wisely restricted his material to those branches of the science which have been conspicuously successful in explaining biologic phenomena. How wisely he has chosen his material is best indicated by the subjects of some of the chapters, which include gases, solutions, electrolytes, hydrogen ions, indicators, buffers, electrometric p_H, adsorption, the colloidal state, membrane equilibrium, equilibriums in blood, reaction velocity and enzyme action, oxidation-reduction potentials, and transformations of energy. The subject matter is presented simply, with the aid of only the most elementary mathematics, which is used only where it is essential. There are many references to books and articles and a selected bibliography for the use of students who are especially interested in this field.

Photographischer Atlas der geburtshilflich-gynäkologischen mikroskopischen Diagnostik. Von Ludwig Fraenkel, o. ö. Professor und Direktor der Universitäts-Frauenklinik in Breslau, und Erich Fels, Privatdozent und Leiter des Laboratoriums der Universitäts-Frauenklinik in Breslau. Cloth. Price, 10 marks. Pp. 28, with 132 illustrations. Berlin: S. Karger, 1933.

This is a handy booklet containing 123 photomicrographs of human gynecologic and obstetric specimens and 9 from mice. The enlargements vary from 7 to 130. A brief description accompanies the illustrations. The quality of the reproduction is good but not excellent according to German standards. The little book makes no great pretensions and ought to be a quick reference for diagnosing microscopically the commonest conditions encountered in the practice of gynecology and obstetrics.

Medicolegal

Employee Injured During Physical Examination

(Crawley v. General Motors Truck Corp. (Mich.), 244 N. W. 143)

In the course of his employment, the plaintiff was struck by a falling timber and suffered an injury to his kidneys. He was awarded compensation for total disability for a period not to exceed 500 weeks. Two years after the accident, the employer, seeking evidence to support a petition to discontinue compensation, ordered the plaintiff to report to the defendant-physician for a physical examination. During the course of that examination, it was claimed, the defendant-physician punctured the plaintiff's urethra. In an action at law brought by the plaintiff against the employer and the physician, the employer made a motion to dismiss the action, contending that the plaintiff's injuries, if compensable, were compensable under the workmen's compensation act and that therefore he should have sought compensation in proceedings before the industrial board, not in an action at law. The motion was overruled and the employer appealed to the Supreme Court of Michigan.

To entitle the plaintiff, said the Supreme Court, to compensation under the workmen's compensation act, the injury must have arisen out of and in the course of his employment. The original injury did so arise. The second injury, the basis of the present suit, occurred two years after the plaintiff's employment had ceased. To bring it within the rule there must appear some causal connection between it and the first injury. In considering the right of an employee to recover for a subsequent injury, this court has held that the subsequent injury must be proximately traceable to the original injury. Here the injury complained of is in no way traceable to the original injury unless the court should adopt the defendant's argument that, if there had been no original injury, there would have been no examination and, if there had been no examination, there would have been no second injury. But, continued the court, that is not what the courts mean by the use of the word "traceable." When used in this connection it means that the second injury follows as a sequence and natural result of the original injury. There is not the slightest connection between the two injuries. The second injury was caused by the intervention of an independent agency producing results wholly disconnected from the original injury. It did not aggravate nor retard recovery from the original injury. It was a new injury having no connection with or effect whatsoever on the original injury.

The second injury did not occur while the defendant-physician was treating the plaintiff or rendering the medical and surgical services which the statute requires of the employer. If the second injury had resulted from treatment which the employer was required by the compensation act to render, a different situation might be presented. But here the injury resulted during an examination conducted for the benefit of the employer. The second injury is not attributable in any sense to the original injury and could not be compensated for under the compensation act as it did not arise out of or in the course of the plaintiff's employment. Therefore, the trial court did not err in refusing to grant the defendant's motion to dismiss the action.

Evidence: Admissibility of Roentgenogram for Purpose of Illustration.—The plaintiff sued for an injury to his knee received in an automobile collision. Medical experts differed as to the extent of the injury. To show the appearance of a knee which had been injured more severely than the plaintiff's, the trial court permitted the introduction in evidence of a roentgenogram of a knee of some person other than the plaintiff. The trial court, however, told the jury that the roentgenogram was not taken of the plaintiff and was introduced merely for the sake of illustration. Under the circumstances, said the Supreme Court of Washington, the trial court committed no error in admitting the roentgenogram in evidence. As was said in *Kelly* v. *Spokane*, 83 Wash. 55, 145 P. 57:

> The practice of admitting photographs and models in evidence in all proper cases should be encouraged. Such evidence usually clarifies some issue and gives the jury and the court a clearer comprehension of the physical facts than can be obtained from the testimony of witnesses.

—Norland v. Peterson (Wash.), 13 P. (2d) 483.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Montgomery, April 18-21. Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Secretary.

American Association for the Study of Goiter, Memphis, Tenn., May 15-17. Dr. J. R. Yung, 670 Cherry Street, Terre Haute, Ind., Secretary.

American Association for the Study of the Feeble-Minded, Boston, May 31-June 3. Dr. Groves B. Smith, Beverly Farms, Godfrey, Ill., Secretary.

American Association for Thoracic Surgery, Washington, D. C., May 9-11. Dr. Duff S. Allen, 3720 Washington Boulevard, St. Louis, Secretary.

American Association of Genito-Urinary Surgeons, Washington, D. C., May 8-10. Dr. Henry L. Sanford, 1621 Euclid Avenue, Cleveland, Secretary.

American Association of Pathologists and Bacteriologists, Washington, D. C., May 2-3. Dr. Howard T. Karsner, 2085 Adelbert Road, Cleveland, Secretary.

American Bronchoscopic Society, Washington, D. C., May 10. Dr. Edwin McGinnis, 104 South Michigan Boulevard, Chicago, Secretary.

American Climatological and Clinical Association, Washington, D. C., May 9-10. Dr. Arthur K. Stone, Auburn Street, Framingham Center, Massachusetts, Secretary.

American Dermatological Association, Chicago, June 8-10. Dr. W. H. Guy, 500 Penn Avenue, Pittsburgh, Secretary.

American Gastro-Enterological Association, Washington, D. C., May 8-9. Dr. John Bryant, 311 Beacon Street, Boston, Acting Secretary.

American Gynecological Society, Washington, D. C., May 8-10. Dr. Otto H. Schwarz, 630 South Kingshighway, St. Louis, Secretary.

American Laryngological Association, Washington, D. C., May 9-10. Dr. George M. Coates, 1721 Pine Street, Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, Chicago, June 8-10. Dr. Robert L. Loughran, 33 East 63d Street, New York, Secretary.

American Neurological Association, Washington, D. C., May 9-11. Dr. Henry A. Riley, 117 East 72d Street, New York, Secretary.

American Ophthalmological Society, Washington, D. C., May 8-10. Dr. J. Milton Griscom, 2213 Walnut Street, Philadelphia, Secretary.

American Orthopedic Association, Washington, D. C., May 8-10. Dr. DeForest P. Willard, 1916 Spruce Street, Philadelphia, Secretary.

American Otological Society, Washington, D. C., May 8-9. Dr. Thomas J. Harris, 104 East 40th Street, New York, Secretary.

American Pediatric Society, Washington, D. C., May 8-10. Dr. Hugh McCulloch, 325 North Euclid Avenue, St. Louis, Secretary.

American Psychiatric Association, Boston, May 29-June 2. Dr. Clarence O. Cheney, 722 West 168th Street, New York, Secretary.

American Society for Clinical Investigation, Washington, D. C., May 8. Dr. H. L. Blumgart, Beth Israel Hospital, Boston, Secretary.

American Society of Clinical Pathologists, Milwaukee, June 9-12. Dr. A. S. Giordano, 531 North Main Street, South Bend, Ind., Secretary.

American Surgical Association, Washington, D. C., May 8-10. Dr. Vernon C. David, 59 East Madison Street, Chicago, Secretary.

Arizona State Medical Association, Tucson, April 20-22. Dr. D. F. Harbridge, 822 Professional Building, Phoenix, Secretary.

Arkansas Medical Society, Hot Springs, May 2-4. Dr. William R. Bathurst, 213 West Second Street, Little Rock, Secretary.

Association of American Physicians, Washington, D. C., May 9-10. Dr. James H. Means, Massachusetts General Hospital, Boston, Secretary.

California Medical Association, Del Monte, April 24-27. Dr. Emma W. Pope, 450 Sutter Street, San Francisco, Secretary.

Conference of State and Provincial Health Authorities, Washington, D. C., June 5-6. Dr. A. J. Chesley, State Department of Health, St. Paul, Secretary.

Congress of Physicians and Surgeons of North America, Washington, D. C., May 9-10. Dr. John T. King, Jr., 1210 Eutaw Place, Baltimore, Secretary.

Connecticut State Medical Society, Hartford, May 24-25. Dr. Charles W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

District of Columbia, Medical Society of the, Washington, May 3. Dr. C. B. Conklin, 1718 M Street N. W., Washington, Secretary.

Florida Medical Association, Hollywood, May 2-4. Dr. Shaler Richardson, 111 West Adams Street, Jacksonville, Secretary.

Georgia, Medical Association of, Macon, May 9-12. Dr. Allen H. Bunce, 139 Forrest Avenue, N. E., Atlanta, Secretary.

Illinois State Medical Society, Peoria, May 16-18. Dr. Harold M. Camp, Lahl Building, Monmouth, Secretary.

Iowa State Medical Society, Des Moines, May 10-12. Dr. Robert L. Parker, 3510 Sixth Avenue, Des Moines, Secretary.

Kansas Medical Society, Lawrence, May 2-4. Dr. J. F. Hassig, 804 Huron Building, Kansas City, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 25-26. Dr. Walter Dent Wise, 1211 Cathedral Street, Baltimore, Secretary.

Massachusetts Medical Society, Boston, June 5-7. Dr. Walter L. Burrage, 182 Walnut Street, Brookline, Secretary.

Minnesota State Medical Association, Rochester, May 22-24. Dr. E. A. Meyerding, 11 West Summit Avenue, St. Paul, Secretary.

Mississippi State Medical Association, Jackson, May 9-11. Dr. T. M. Dye, Clarksdale, Secretary.

Missouri State Medical Association, Kansas City, May 1-4. Dr. E. J. Goodwin, 634 North Grand Boulevard, St. Louis, Secretary.

Nebraska State Medical Association, Omaha, May 23-25. Dr. R. B. Adams, Center McKinley Building, Lincoln, Secretary.

New Hampshire Medical Society, Manchester, May 16-17. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.

New Jersey, Medical Society of, Atlantic City, June 6-9. Dr. J. B. Morrison, 66 Milford Avenue, Newark, Secretary.

North Carolina, Medical Society of the State of, Raleigh, April 17-19. Dr. L. B. McBrayer, Southern Pines, Secretary.

Oklahoma State Medical Association, Oklahoma City, May 15-17. Dr. C. A. Thompson, Commercial National Bank Building, Muskogee, Secretary.

Rhode Island Medical Society, Providence, June 3. Dr. J. W. Leech, 167 Angell Street, Providence, Secretary.
Society for the Study of Asthma and Allied Conditions, Washington, D. C., May 6. Dr. W. C. Spain, 116 East 53d Street, New York, Secretary.
South Carolina Medical Association, Spartanburg, April 18-19. Dr. E. A. Hines, Seneca, Secretary.
South Dakota State Medical Association, Huron, May 15-17. Dr. John F. D. Cook, Langford, Secretary.
Texas, State Medical Association of, Fort Worth, May 8-11. Dr. Holman Taylor, Medical Arts Building, Fort Worth, Secretary.
West Virginia State Medical Association, Charleston, May 22-24. Mr. Joe W. Savage, Professional Building, Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

44: 1153-1388 (Dec.) 1932

*Mediastinal Tumor in Acute Leukemia: Clinical and Roentgenologic Study. Jean V. Cooke, St. Louis.—p. 1153.
Biologic Relationship Between Cow's, Goat's and Human Caseins. A. F. Anderson and O. M. Schloss, New York, and H. C. Stuart, Boston.—p. 1178.
Relation of Measles and Tuberculosis in Young Children: Clinical and Roentgenographic Study. J. L. Kohn and H. Koiransky, New York. —p. 1187.
Effect of Heat on Antigenic Properties of Milk. J. H. Lewis and Helen C. Hayden, Chicago.—p. 1211.
*Soy Bean (Vegetable) Milk in Infant Feeding: Preliminary Report. F. R. Rittinger and L. H. Dembo, Cleveland.—p. 1221.
Serum Proteins in Infancy and in Childhood: Effects of Malnutrition and of Acute and Chronic Infections on Serum Proteins in Infancy and in Childhood. C. H. Webb, Shreveport, La.—p. 1239.
*Immunization Against Diphtheria with Toxoid, with Especial Reference to Time Interval and Size of Injections. P. B. Kreitz, Ann Arbor, Mich.—p. 1249.
Modes of Cardiac Insufficiency in Children with Heart Disease. J. Levy, New Rochelle, N. Y.—p. 1259.
Cyanosis in the New-Born. F. C. Hunt, New York.—p. 1268.

Mediastinal Tumor in Acute Leukemia.—Cooke reports the cases of nine boys with massive leukemic enlargements of the thymic region. In four, the clinical symptoms of pressure preceded the blood picture of acute leukemia, and in these cases irradiation with the roentgen rays produced relief from the respiratory distress. In three, the mediastinal tumor disappeared completely and permanently within a few days, although all died later of acute leukemia. It seems likely that such mediastinal involvement is more frequent in acute leukemia than is generally recognized, since the nine instances reported occurred in a series of thirty-eight cases. A review of the seventy-four cases reported in the literature and those reported by the author shows that the condition affects males almost six times as frequently as females, and that over 90 per cent have occurred in persons under 30 years of age. Although irradiation has usually produced a temporary beneficial effect on the mediastinal tumor if employed before blood changes were present, such irradiation by roentgen rays or radium afterward seems not only to be without benefit but in certain instances to have hastened the time of death. The author concludes that the study of the clinical and pathologic reports of the observed cases has given the impression that the mediastinal mass is the result of infiltration by leukemic cells carried there by the blood stream rather than a true neoplastic tumor arising in situ. Whatever its nature, the condition is sufficiently characteristic, as determined by modern methods of clinical examination, to be readily recognized and to merit consideration as a clinical entity in acute leukemia.

Soy Bean Milk in Infant Feeding.—Rittinger and Dembo made a preliminary study of fifty infants fed soy bean (vegetable) milk for over a period of a year. The progress in weight and the state of nutrition shown demonstrated that the soy bean, with the addition of sugars and various mineral salts, can be made an adequate food for infants. The preparation used contained adequate amounts of the essential vitamins. The stool flora resembled that of the normal, breast fed baby. The economic features (mass production and low cost) are especially significant in a consideration of soy bean milk as an infant food. It compares favorably with the milk of animals from the standpoint of nutritional availability and biologic value. The authors have an additional 100 babies under observation on a diet of soy bean milk, either as a complement to breast milk or as an exclusive food. They will report their studies at a later date.

Immunization Against Diphtheria.—Kreitz gave eighty-six nurses and hospital employees two 1 cc. doses of commercial toxoid with seven days between injections. Immunity, measured by a negative Schick test, was acquired rapidly. One week after the second injection of toxoid, from 34 to 43 per cent of the subjects gave negative reactions; at two weeks, from 41 to 46 per cent; at three weeks, from 61 to 63 per cent; at four weeks, from 71 to 73 per cent, and at from fourteen to sixteen weeks, from 80 to 87 per cent. A single injection of 1.5 cc. of commercial toxoid did not give sufficient immunity to warrant its continued use in comparison with the immunity obtained by two injections of 1 cc. of toxoid at an interval of one week. The author presents a summary of other authors' results with toxoid immunization against diphtheria. These data tend to show that it is probable that a total dosage of at least 2 cc. of commercial toxoid is necessary for satisfactory immunization against diphtheria.

American Journal of Tropical Medicine, Baltimore

13: 1-140 (Jan.) 1933

Studies on Pathogenesis of Neurotropic Yellow Fever Virus in Macacus Rhesus. W. Lloyd and H. A. Penna, Bahia, Brazil.—p. 1.
Experimental Studies on Human and Primate Species of Strongyloides: I. Variability and Instability of Types. E. C. Faust and E. S. Kagy, New Orleans.—p. 47.
Ganta Dispensary Patients: Statistical Study of Six Thousand Two Hundred and Ninety-One Consecutive Outpatients in Northeastern Liberia. G. W. Harley, Monrovia, Liberia, Africa.—p. 67.
Behavior of Avian Malarias in Common Fowl, an Abnormal Host. R. D. Manwell, Gothic, Colo.—p. 97.
Differentiation of Flagellates of Genus Leishmania Ross, 1903, by Lytic Action of Specific Serums. F. da Fonseca, São Paulo, Brazil. —p. 113.

Archives of Internal Medicine, Chicago

50: 801-960 (Dec.) 1932

*Decreased Dextrose Tolerance in Acute Infectious Diseases. J. L. Williams and G. F. Dick, Chicago.—p. 801.
Asthma: XVI. Two Hundred and Thirteen "Cured" Patients Followed up Four Years Later. F. M. Rackemann, Boston.—p. 819.
Hyperproteinemia Due to Bence-Jones Protein in Myelomatosis. J. W. Shirer, W. Duncan and R. L. Haden, Cleveland.—p. 829.
*Maturing Effect of Roentgen Rays on Blood-Forming Cells. R. Isaacs, Ann Arbor, Mich.—p. 836.
*Endemic Nutritional Edema: I. Clinical Findings and Dietary Studies. J. B. Youmans, A. Bell, Dorothy Donley and Helen Frank, Nashville, Tenn.—p. 843.
Diffusible Calcium of Blood Stream: V. Influence of Agents Which Affect Blood Calcium on Calcium Distribution and Inorganic Phosphate of Serum. D. M. Greenberg and L. Gunther, with assistance of J. B. Dalton and W. E. Cohn, Berkeley, Calif.—p. 855.
*Chemistry and Metabolism in Experimental Yellow Fever in Macacus Rhesus Monkeys: VI. Bromsulphalein Liver Function Test and van den Bergh Reaction. A. M. Wakeman and Clare A. Morrell, New York.—p. 876.
*Thrombo-Angiitis Obliterans Among Women. B. T. Horton and G. E. Brown, Rochester, Minn.—p. 884.
Mitotic Myelocytes in Peripheral Blood in Case of Myeloid Leukemia in Negro. H. Bowcock, Atlanta, Ga.—p. 908.
Graphic Registration of Heart Sounds by Argon Glow Tube. A. G. Asher, Kansas City, Mo.—p. 913.
Azotemia Due to Low Blood Pressure: Its Occurrence in an Unusual Case of Acute Rheumatic Fever. P. Shambaugh, Boston.—p. 921.
Chronic Arthritis: Clinical Analysis of Three Hundred and Fifty Cases. M. Wetherby, Minneapolis.—p. 926.
*Exogenous Tuberculous Infection of Adults: Marital Tuberculosis. E. L. Opie and F. M. McPhedran, Philadelphia.—p. 945.
Normal Renal Threshold for Dextrose. R. A. Campbell, E. E. Osgood and H. D. Haskins, Portland, Ore.—p. 952.

Decreased Dextrose Tolerance.—Williams and Dick summarize the results of the dextrose tolerance test in 108 patients to whom 100 Gm. of dextrose in lemonade was given to adults and approximately 1 Gm. per pound of body weight to children. The study included 67 patients with scarlet fever, 17 with diphtheria, 8 with pneumonia, 5 with influenza, 3 with acute tonsillitis, 3 with measles, 1 each with erysipelas, encephalitis, mumps, epidemic meningitis and poliomyelitis, and 10 nor-

mal subjects. Glycosuria occurred in 41 per cent of patients with acute infectious diseases. The largest average amount of dextrose was excreted by the patients with influenza and miscellaneous acute infections. This glycosuria was accompanied by a lower carbohydrate tolerance, as shown by dextrose tolerance tests and blood sugar curves both in acute infectious diseases and in experimental infections in animals. Administration of insulin improved the dextrose tolerance in acute infections. The authors' work suggests that in infectious diseases there is often an injury to the islets of Langerhans with a lessened production of insulin.

Effect of Roentgen Rays on Blood-Forming Cells.—According to Isaacs, the effect of roentgen irradiation, in both small and large doses, on developing blood cells is stimulating, the result depending on the stage of development of the cells. Cells in the myeloblastic, lymphoblastic or a younger stage are stimulated to rapid reproduction, because of their growth potentiality at that stage, whereas cells in the myelocytic stage or the medium-sized lymphocytic stage are stimulated to grow through the rest of their life history in an orderly manner, because normally these cells do not divide and multiply. They die or are eliminated as normal senile cells. There is no evidence of a toxic necrotic action of the roentgen rays when applied in therapeutic doses. The process is hastened by larger doses, so that senility is reached more quickly, giving the impression of a "depressing" action. The period between the application of the roentgen rays and the time when the cells reach senility is the latent period. This corresponds to the time necessary for the cells to mature. The action of roentgen rays on living, blood-forming cells is one of stimulation to divide or to mature in a normal manner, and not one of toxic necrosis. Tissue cells that have a long adult life (muscle cells, nerve cells and fibrous tissue cells) appear resistant to roentgen rays, whereas those that have a short adult life (germ cells and leukocytes) die soon after they are "stimulated" to develop to senility. They all have the same susceptibility, but death follows at varying intervals, depending on how long the cells normally survive in their physiologic life.

Endemic Nutritional Edema.—Youmans and his associates present the clinical observations in a group of thirty-one patients whose principal complaint was a mild edema, apparently nutritional in nature. The diet of twelve of these patients was determined before the institution of treatment or experimental studies. In all but one, the total calories were below the basal requirements. The average protein intake ranged from 20 to 52 Gm. daily and was below the usual minimum (from 0.5 to 0.7 Gm. per kilogram) in all but four cases. The authors believe that the patients were suffering from a chronic dietary deficiency, particularly a shortage of protein, with an accompanying nutritional edema.

Yellow Fever in Monkeys.—Wakeman and Morrell believe that the rate of excretion of bromsulphalein dye by the liver is greatly diminished in yellow fever. In their study on forty-nine monkeys, an abnormally great retention of the dye by infected monkeys was observed in many cases several days before death. The onset of jaundice during yellow fever was manifested by an increase in the bilirubin content of the blood. The increased retention of bile pigment in the blood may begin several days before death. Increasing amounts of bile pigment in the blood and, more especially, abnormally slow removal of bromsulphalein dye from the blood were the first indications of loss of hepatic function in monkeys suffering from yellow fever. The authors present some evidence showing that the clotting time of blood is usually prolonged in yellow fever. The increased clotting time was associated with a lowered fibrinogen content of the blood. Monkeys dying of yellow fever did not excrete acetone in the urine. This fact supports the evidence that the liver is the chief site of acetone formation.

Thrombo-Angiitis Obliterans Among Women.—Further consideration of this disease, with its predilection for men, should be delayed until a larger number of women with complaints in the extremities have been examined. Horton and Brown are of the opinion that thrombo-angiitis obliterans has a higher incidence among women than is brought out by their study. The failure to recognize this is due probably to the facts that the disease is relatively mild among women and that the diagnosis is overlooked. If this is a chronic infectious disease, as the work of Buerger and of Horton and Dorsey seems to indicate, no available explanation is at hand. The authors report seven cases of thrombo-angiitis obliterans from the literature and ten observed by them. The ages of their ten patients were 44, 43, 60, 71, 47, 28, 38, 38, 30 and 43. Four of the patients were treated by bilateral lumbar sympathetic ganglionectomy; one of these also had bilateral cervicothoracic sympathetic ganglionectomy. The right leg of one patient was amputated and the other patients were treated medically. The treatment, for the most part, has proved satisfactory.

Exogenous Tuberculous Infection of Adults.—The susceptibility of adults to the contagion of tuberculosis, a classic subject of controversy, is still under discussion. Many have maintained that the disease does not occur more frequently in adults conspicuously exposed to it than in the general population. Opie and McPhedran point out that, when roentgenographic methods are used for the recognition of tuberculous lesions of the lungs in husbands and wives in contact with a tuberculous mate, exogenous infection of adults is clearly demonstrable. Husbands and wives in marital contact with tuberculosis under varying conditions are infected from five to nine times as often as persons with no known contact with the disease; husbands are infected oftener than wives. In the authors' study of 533 couples, the frequency of infection in wives exposed to husbands with tubercle bacilli in the sputum was 35.5 per cent; in those exposed to husbands with no demonstrable tubercle bacilli, 22.9 per cent. The incidence of infection in husbands exposed to wives with open tuberculosis was 45.6 per cent and, when there were no tubercle bacilli in the sputum, 35.9 per cent. When the incidence of latent apical tuberculosis in persons exposed to tuberculosis in husband or wife is compared with that in husbands or wives with no known exposure to tuberculosis, the possibility that the difference has occurred by chance is negligible.

Canadian Public Health Journal, Toronto

23: 503-552 (Nov.) 1932

*Outbreak of Milk-Borne Typhoid Fever. F. S. Leeder, Pittsfield, Mass.—p. 503.
Importance and Value of Softening Municipal Water Supplies. R. E. Thompson, Toronto.—p. 507.
Treatment of Paralyses of Poliomyelitis: Part I. General Principles: Part II. Some Details of Management of Early Cases: Part III. Some Organizations to Provide this Care. Jean Macnamara, Melbourne, Australia.—p. 517.
Infantile Paralysis in Vermont. Lillian E. Kron, Burlington, Vt.—p. 543.

Milk-Borne Typhoid.—Leeder definitely traced twenty-five cases of typhoid to a forty quart, inspected but unpasteurized, milk supply from a tuberculin tested herd. Three contact cases occurred among the nonimmunized members of the originally infected families. The attack rate was 40 per cent. There were two deaths, giving a case fatality rate of 7 per cent. A typhoid carrier was found among the milk handlers on the suspected farm. The outbreak occurred two weeks after a change in the usual routine of the carrier; i. e., a gastro-intestinal upset with diarrhea. The author concludes that, important as the tuberculin testing of cattle and the periodic analyses of milk samples are, particularly in assuring the production of clean milk from healthy cows—a milk fit to be pasteurized—they do not protect from milk-borne typhoid. To safeguard the public health and to assure the consumer of a good product, milk regulations should require that milk sold within a town be "from tuberculosis free herds, from inspected sources, of good quality and pasteurized."

Florida Medical Association Journal, Jacksonville

19: 233-268 (Dec.) 1932

Modern Treatment of Syphilis and Some of Its Complications. F. Wilson, Jacksonville.—p. 237.
Endocervicitis. W. J. Johnston, Sarasota.—p. 241.
Preoperative and Postoperative Treatment of Surgical Patients, Without Complications. Carol C. Webb, Pensacola.—p. 245.
Malaria Control Investigations. T. H. D. Griffitts, Jacksonville.—p. 249.
Avulsion of Phrenic Nerve: Report of Case. C. Anderson, Tampa.—p. 251.
Function of Newly Formed American Academy of Pediatrics. W. McKibben, Miami.—p. 252.
Should a Physician Treat Mouth Infections? J. H. Klock, Miami.—p. 254.

Journal of Biological Chemistry, Baltimore

98: 389-813 (Nov.) 1932. Partial Index

Determination of Iodine in Blood, Foods and Urine. E. J. Baumann and Nannette Metzger, with the cooperation of L. K. Baldauf, New York.—p. 405.

Metabolism of Cystine and Methionine: Availability of Methionine in Supplementing Diet Deficient in Cystine. R. W. Jackson and R. J. Block, New Haven, Conn.—p. 465.

Effects of Yeast Ingestion on Composition of Urine and Feces. H. B. Pierce, with assistance of D. D. Posson, V. du Vigneaud, C. A. Morrison, Z. du Vigneaud and M. S. Pierce, New York.—p. 509.

Calcium and Phosphorus Content of Brain in Experimental Rickets and Tetany. A. F. Hess, J. Gross, Mildred Weinstock and Frieda S. Berliner, New York.—p. 625.

Effect of Heat at Varying Concentrations of Hydrogen Ion on Vitamin B (B_1) in Protein-Free Milk. Nellie Halliday, with assistance of Veda Ellen Hiller, East Lansing, Mich.—p. 707.

Spectrophotometric Studies: I. Spectrophotometric Constants for Common Hemoglobin Derivatives in Human, Dog and Rabbit Blood. D. L. Drabkin and J. H. Austin, Philadelphia.—p. 719.

Preparation of Extracts of Anterior Pituitary-Like Substance of Urine of Pregnancy. P. A. Katzman and E. A. Doisy, St. Louis.—p. 739.

Effect of Parathyroid Extract on Blood Magnesium. D. M. Greenberg and Myrtle A. Mackey, Berkeley, Calif.—p. 765.

Irradiated Milk: Influence of Intensity and Character of Radiations on Antirachitic Potency. G. C. Supplee, Bainbridge, N. Y.; H. H. Beck and M. J. Dorcas, Cleveland.—p. 769.

Journal of Lab. and Clinical Medicine, St. Louis

18: 329-438 (Jan.) 1933

*Pathogenic Yeasts and Yeastlike Organisms: Report of Case in Minnesota Simulating Coccidioidal Granuloma. D. C. Beaver and E. D. Furrer, Rochester, Minn.—p. 329.

Sulphemoglobinemia. J. C. Healy, Boston.—p. 348.

Tartrate Metabolism: I. Grape Tartrates and Acid-Base Balance. O. B. Pratt and H. O. Swartout, Los Angeles.—p. 354.

Id.: II. Mode of Action of Ingested Tartrates. O. B. Pratt and H. O. Swartout, Los Angeles.—p. 366.

Study of Occurrence of Unfertilized Ascaris Eggs. A. E. Keller, Nashville, Tenn.—p. 371.

Study of Fröhde's Test for Morphine. C. F. Poe and Pearl Surbrugg Stehley, Boulder, Colo.—p. 375.

Local Immunization of Peritoneum by Use of Bacteriophage: Negative Report. T. B. Rice, Indianapolis.—p. 381.

*Localized Areas of Ischemia on Hands. W. Marshall and C. White, Chicago.—p. 386.

*Nonspecific Fixability of Guinea-Pig Serum with Bordet's Antigen. H. A. Austin, Rochester, N. Y.—p. 389.

Specificity of Kahn Test in Malaria. C. R. Smith, Detroit.—p. 396.

Pathogenic Yeasts and Yeastlike Organisms. — Beaver and Furrer present in detail an unusual case of systemic infection due to yeastlike parasites. The case is of particular interest because of its organic localizations, which were cerebellar, pulmonic and subcutaneous (two small abscesses). Its clinical, etiologic and pathologic resemblance to coccidioidal granuloma in a resident of Minnesota who had not recently traveled elsewhere is also noteworthy. In their case the organisms revealed dual processes of reproduction in the tissues, namely, by budding and sporulation, such as has been demonstrated by Ricketts, Stober, Montgomery, LeCount and Myers, and others. The authors partly review the literature on the subject of infections due to yeasts and yeastlike organisms. The review demonstrates that a close relationship exists between the various yeasts and yeastlike pathogens and the diseases which they cause, and that attempts to classify them without keeping this relationship in mind tends to confuse rather than clarify the subject. They present their observations of the necropsy examination. They could not determine the source of the infection in their case. No other cases were known in the locality from which the patient came. The primary lesion was possibly pulmonary, with lymphatic dissemination to the peribronchial lymph nodes, and hematogenous distributions to the cerebellum and cutaneous tissue.

Localized Areas of Ischemia. — Marshall and White describe two cases of multiform, small areas of transient ischemia, which are continually residual in the patients. These white macules resemble Bier's spots and the macules described by Tracy as "chronic vasoconstrictor spots." There was no evidence of the presence of associated pigment spots, nor was there any associated anemic dermatography present in their patients. It is believed that the spots occur in patients of a neurasthenic constitution. These patients showed a hyperactive nervous system manifested by sinus arrhythmia and insomnia. It is not the authors' belief that these macules are associated with neural disorders, as Tracy has stated. These multiform areas of localized ischemia on the hands are not uncommon, although not described in any of the standard dermatologic textbooks. They may be easily confused with vitiligo.

Nonspecific Fixability of Guinea-Pig Serum.—Austin, in testing 400 guinea-pig serums, observed that at least one third were not suitable for use with Bordet's antigen, and, since the inclusion of unsuitable serums in the pooled complement gave rise to apparently nonspecific reactions with Bordet's antigen on spinal fluids, it is obvious that all guinea-pig serums should be subjected to a preliminary test for nonspecific fixability with Bordet's antigen, and only those serums which do not react with this antigen should be included in the pooled complement. The sex of the guinea-pig did not seem to be a factor in the quality of nonspecific fixability with Bordet's antigen, or of its variability in the same guinea-pig.

Journal of Thoracic Surgery, St. Louis

2: 115-228 (Dec.) 1932

Surgical Treatment of Tuberculous Empyema. C. A. Hedblom, Chicago.—p. 115.

*Tuberculous Pyopneumothorax with Pyogenic Infection. F. B. Berry, New York.—p. 139.

Extrapleural Thoracoplasty in Presence of Pneumothorax or Hydrothorax: Necessity of Emptying Pleural Cavity and Method of Doing This. R. B. Bettman, Chicago.—p. 154.

*Treatment of Chronic Empyema by Tidal Irrigation, Suction and Thoracoplasty. D. Hart, Durham, N. C.—p. 157.

Concerning Nature and Function of Certain Afferent Pathways from Thoracic Viscera. P. Heinbecker, St. Louis.—p. 183.

*Inhibition of Respiration as Factor in Pathogenesis of Postoperative Pulmonary Complications. H. A. Carlson, Minneapolis.—p. 196.

Diagnosis of Bronchial Fistulas: Description of New Apparatus and Technic. R. B. Bettman, S. Perlow and D. J. Cohn, Chicago.—p. 213.

Tuberculous Pyopneumothorax with Pyogenic Infection. — Berry outlines the development of the treatment of cases of tuberculous pyopneumothorax with added pyogenic infection. Of the seventy-five patients whom he treated in various ways, forty-two are dead, a mortality of 54.6 per cent, and fifteen are cured, 20 per cent. Of the others, four are improved, four are unimproved, six are still under treatment and four have been lost from his follow up. The author recommends that conservative treatment with repeated aspirations and pleural lavage should be tried first in patients not having a patent bronchopleural fistula. If successful, oleothorax should be instituted or artificial pneumothorax resumed. Early thoracoplasty is the ultimate and safest procedure. If conservative treatment fails after a trial of a week or ten days, these closed cases should be treated like those with an open bronchial fistula. Thoracotomy should be performed, followed by extrapleural thoracoplasty as soon as the condition of the patient warrants it. The author describes the technic of a radical and extensive thoracoplasty in which the procedure is performed in two or more stages from above downward.

Treatment of Chronic Empyema. — Hart presents a method for treating chronic empyema by closing down the large cavity to a small size by irrigation and suction. The entire roof of the small remaining cavity is readily removed during one operation with little shock to the patient. The bacterial content of the cavity has been lowered so that the infection of the operative wound is less severe. The wound is left wide open, and with no overhanging, thick, fibrous edges there is less possibility of a persistent sinus. Large bronchial fistulas prevent tidal irrigation by the continuous outflow of air and pus through the thoracotomy tube. The continuous passage of air through the bronchial fistula prevents pus entering the bronchi and avoids irritation and cough. The tube in bronchial fistula cases should be inserted so that it passes through the chest wall above the fluid level, should lie within the chest along the chest wall or diaphragm, should extend to the most dependent part of the cavity, and should have all openings near the tip so that it will keep all pus aspirated. This leaves the bronchial fistula opening above the fluid level, and the cavity below the fistula level can be periodically washed out. The cavity which persists as the lung expands is more likely to be anterior, since the weight of the lung causes it to fall into a dependent position and become adherent there. The empyema cavity can be kept clean and absorption prevented by continuous irrigation. Surgical solution of chlorinated soda and from 1 to 2 per cent solution of acetic acid can be used to remove the redundant caseating granulation tissue. The patient must be watched closely for bleeding. The height of fluid above the level

of the thoracotomy wound must be counterbalanced by a corresponding amount of suction if leakage about the tube is to be prevented. The rate of expansion of the lung can be regulated by the amount of suction used. The lung can be actually compressed by the weight of the fluid if the tube is inserted near the upper level of the fluid. The tube should be inserted where it does not interfere with an extrapleural paravertebral or anterolateral thoracoplasty. Irrigation and suction can be continued during and after a thoracoplasty, which can be performed in an aseptic field, and primary healing can be obtained. This permits closure of the empyema cavity without expanding the infected lung, and avoids the severe sepsis that follows infection of a large, fresh operative wound. If a small cavity persists after every effort has been made to close it, the roof should be removed as in a chronic pyogenic empyema.

Inhibition of Respiration. — Carlson states that after abdominal operations there is a marked inhibition of abdominal (diaphragmatic) breathing, which is greatest after operations on the upper part of the abdomen. There is little or no inhibition of abdominal breathing after operations on other anatomic regions. An increased rate of respiration occurs after most operations. The amplitude of thoracic excursion is increased after most operations, including those of the abdomen. Vital capacity is definitely reduced after abdominal operations, thyroidectomies and operations involving the chest and diaphragm, but the reduction is most extreme after abdominal operations. The reduction of blowing pressure is almost identical with the reduction of the vital capacity, except after thoracoplasty. The inhibition of diaphragmatic breathing and decrease of vital capacity after operations is chiefly the result of a reflex protective mechanism. Inhibition of abdominal breathing leading to decreased ventilation of the lower lobes of the lungs is probably an important factor in the pathogenesis of postoperative pulmonary complications.

Maine Medical Journal, Portland

23: 241-267 (Dec.) 1932

*Therapeutic Use of Glucose. L. H. Smith, Winterport.—p. 243.
The Anemias: Their Diagnosis and Treatment: Part II. I. Olef, Boston.—p. 246.

Therapeutic Use of Dextrose.—Smith believes that one of the best combatants for certain complications, the anhydremic shock dependent on simple loss of blood value, as in diabetes, and the toxemic shock dependent on cardiac or capillary paralysis of bacterial or protein origin, such as in pneumonia, is dextrose. The administration depends entirely on whether hospital facilities are offered or one is in the backwoods: if in a hospital, 1,000 cc. of a 5 to 10 per cent solution of dextrose; if on the outside, a more highly concentrated solution. In giving 200 cc. of a high concentration, the author has no concern except that it run freely and continuously. One of the difficulties encountered is that after a few injections all the good veins are thrombosed. If more than 500 cc. is given, not more than 500 cc. should be given in an hour. In using the lower concentrations and larger amounts of fluid, the dextrose is added to physiologic solution of sodium chloride. The average amount of dextrose for an adult is about 1 Gm. per kilogram of body weight, for the initial dose at least. Subsequent doses may be increased if desired. To give less than a therapeutic dose is a common mistake and accounts for some of the disappointments. Some of the other conditions that are benefited by its use are as an emergency food in cases of gastric ulcer with pyloric obstruction, marasmus, vomiting in pregnancy and insulin shock.

Medical Journal and Record, New York

137: 1-44 (Jan. 4) 1933

Management of Patients Exhibiting Profound Undernutrition, Including Use of Insulin as Agent for Promotion of Appetite and Gain of Weight. L. F. Barker, Baltimore.—p. 1.
Headache. O. T. Osborne, New Haven, Conn.—p. 5.
Tuberculosis of Prostate Associated with Adenomatous Prostate. G. Greenberg, New York.—p. 6.
Meningococcus Meningitis Followed by Tuberculous Meningitis. M. Schuman, New York.—p. 8.
Relation Between Presence of Natural and Artificial Antibodies in Organism. S. M. Enaliev, Kazan State University, Russia.—p. 10.
Statistical Service Survey. N. F. Shambaugh, Long Beach, Calif., and G. B. Desparois, Los Angeles.—p. 13.

Minnesota Medicine, St. Paul

16: 1-72 (Jan.) 1933

Primary Carcinoma of Lungs. E. J. Simons, Swanville.—p. 1.
Fracture Work in Small Community. B. J. Branton, Willmar.—p. 6.
Equipment Necessary for First Aid Treatment of Fractures. R. C. Webb, Minneapolis.—p. 8.
Subdiaphragmatic Abscess and Liver Abscess. W. G. Benjamin, Pipestone.—p. 11.
Gradual Decompression of Biliary System: Mechanical Factor in Postoperative Hemorrhage and Hepatic Insufficiency in Jaundiced Patients. J. Culligan, St. Paul.—p. 15.
*Anal Fistulas. L. A. Buie, Rochester.—p. 19.
Present Day Surgical Treatment of Carcinoma of Rectum and Rectosigmoid. F. W. Rankin, Rochester.—p. 23.
Sex Hormones. G. E. Hudson, Minneapolis.—p. 28.
Some Practical Aspects of Allergy. F. W. Gaarde, Rochester.—p. 32.
*Sciatic Syndrome. W. P. Gardner, St. Paul.—p. 36.
Unsuspected Syphilis Revealed by Routine Wassermann Test. C. R. Drake, Minneapolis.—p. 43.
Combination of Amytal with Ephedrine in Treatment of Asthma. M. W. Binger, Rochester.—p. 44.

Anal Fistulas.—Buie uses the term "anal fistula" to designate a discharging sinus or sinuses, with one or more openings in the anal canal and an opening or openings either on the external surface of the body or in an adjacent viscus, such as the vagina, bladder, urethra, uterus, prostate gland, seminal vesicles, or the bowel itself. He states that the primary opening will usually be found in an anal crypt and that the tendency to pass the margin where the crypts are situated and to look too high for the origin of the disorder are the chief reasons for failure to cure anal fistulas. The patient with an anal fistula usually does not consult a physician until after the abscess has formed and frequently until after it has ruptured. If induration without fluctuation is present, hot applications and such measures as are necessary to bring the abscess to a "head" should be used, after which it should be opened. The incision should be made in such a manner as to leave the secondary opening as large, if possible, as the cavity of the abscess. An iodoform gauze drain should be put in after the operation is completed. Before fistulectomy is performed, the cavity of the abscess should be permitted to heal until it is reduced in size and only a chronic fistulous tract remains. If the abscess is small, complete excision, including the anal crypt, may be possible. The abscess should be taken care of first and the fistula later. The preparation of the patient for operation is essentially the same as that for other rectal operations. In cases complicated by tuberculosis, treatment of anal fistulas should be surgical, even if the pulmonary lesion is severe. The patient should be relieved of the additional physical burden by a suitable operation.

Sciatic Syndrome.—The symptom complex generally called sciatica is not a clinical entity and should be referred to as the sciatic syndrome. Gardner classifies, on an etiologic basis, the four chief varieties of this syndrome: (1) that variety which is secondary to general disease or gross pressure, (2) true sciatic neuritis, (3) that variety which is due to myositis or fibromyositis, and (4) the type due to neurodocitis. Rational treatment demands thorough study of each case, accurate classification if possible, and logical treatment of the causative factor whenever practicable. If thorough investigation shows the sciatic syndrome to be secondary to a general disease such as syphilis, diabetes or lead poisoning, treatment must be aimed at the primary causative factor in each individual case. Sacral epidural injection may be of great value in obtaining comfort for the patient while specific therapy is under way. In the treatment of sciatic neuritis, rest, heat and the relief of pain are indicated; this means rest in bed, preferably with the affected limb wrapped in sheet wool. Diathermy from the lumbosacral region to the toes gives a moderate heat throughout the course of the nerve and, along with galvanism, is of value in moderately severe and acute cases. In chronic cases, the injection of from 50 to 100 cc. of sterile physiologic solution of sodium chloride following immediately a preliminary injection of 2 cc. of a 2 per cent solution of procaine hydrochloride within the nerve sheath gives a good result in most cases. Injection may be made either at the level of the ischial tuberosity or in the middle of the buttock, where the nerve has just left the sacrosciatic notch. When the sciatic syndrome is due to myositis or fibromyositis, physical therapy is the treatment of choice. In the subacute and chronic cases of this type the most likely underlying basis is focal infection, and all foci of infection must be adequately treated. In those

instances in which the sciatic syndrome has been produced by a neurodocitis due either to arthritis of the intervertebral foramina or to the less common cause, sprain and subluxation of the sacro-iliac or lumbosacral joints, the guiding principle is immobilization. In milder and recent cases, rest in bed, physical therapy and analgesics, with immobilization by adhesive plaster strapping, may suffice. In the more severe and less recent cases, more extensive procedures may be required.

Missouri State Medical Assn. Journal, St. Louis

30: 1-50 (Jan.) 1933

Sinus Disease. E. S. Connell, Kansas City.—p. 1.
Mastoid Disease. S. Spencer, St. Louis.—p. 3.
Infective Sinus Thrombosis. W. E. Sauer, St. Louis.—p. 6.
Thymic Deaths. H. M. Gilkey, Kansas City.—p. 9.
Keratoses of Face and Hands: Differential Diagnosis Between Precancerous and Benign Keratoses. G. V. Stryker, St. Louis.—p. 15.
Modern Management of Acne Vulgaris. N. Tobias, St. Louis.—p. 17.
Precancerous Lesions of Skin. A. H. Conrad, St. Louis.—p. 21.
Cinchophen Poisoning: Fatal Case. E. T. Johnson, Kansas City.—p. 22.
Peripheral Burns: Their Pathology and Treatment. B. L. Myers, Kansas City.—p. 25.
Headaches of Ocular Origin. A. W. McAlester, Jr., Kansas City.—p. 30.
Bacteriologic Diagnosis of Diphtheria: Relation Between Morphology and Virulence of Corynebacterium. J. C. Willett, N. Nagle and C. L. Pfau, St. Louis.—p. 31.
Stovarsol in Treatment of Ocular Syphilis. W. M. James, St. Louis.—p. 33.

New England Journal of Medicine, Boston

207: 1125-1176 (Dec. 22) 1932

Operative Evacuation of Small Intestine in Paralytic Stasis. D. Cheever, Boston.—p. 1125.
Oxygen and Carbon Dioxide Therapy. M. Saklad, Providence, R. I.—p. 1132.
Recommendations of Committee on Costs of Medical Care. C.-E. A. Winslow, New Haven, Conn.—p. 1138.
*Luminal in Controlling Restlessness from Sodium Amytal in Obstetrics: Review of Thirty-Nine Cases. N. S. Scarcello, Worcester, Mass.—p. 1142.
Severe Thallium Acetate Intoxication Caused by Use of a Depilatory Called "Koremlu": Report of Case. A. Rudy, Boston.—p. 1151.

207: 1177-1236 (Dec. 29) 1932

Hereditary Hemorrhagic Telangiectasia: Report of Five Cases in Two Families. R. C. Larrabee, Boston, and D. Littman, Chelsea, Mass.—p. 1177.
Report on Undergraduate Teaching of Surgery. E. C. Cutler, Boston.—p. 1182.
Case of Intrathoracic Goiter. E. L. Young, Jr., Boston.—p. 1185.
Fungus Skin Disease and Allergy: Causal Relationship. J. L. Grund, Boston.—p. 1187.
Traumatic Bile Cyst of Liver. J. F. Curran and R. H. Goodale, Worcester, Mass.—p. 1192.
Present and Future Significance of Observations and Recommendations of Committee on Costs of Medical Care, from Physician's Point of View. L. F. Barker, Baltimore.—p. 1193.
Social Aspects of Poliomyelitis. Ellen Barbour, Lexington, Mass.—p. 1195.

Phenobarbital in Obstetrics.—Scarcello states that the chief drawback to the use of sodium amytal in obstetrics is the restlessness it produces. He used phenobarbital, another barbituric acid preparation, in thirty-nine patients to counteract this undesirable effect through its greater sedative action. Restlessness was found to be absent in thirty cases, marked in three, present to a moderate degree in five, and present to a slight degree in only one. Amnesia was complete in twenty-four patients, moderate or of fair degree in seven, absent in five, and of slight degree in three. Cooperation on the part of the patient was obtained in thirty-two cases, lacking in two, and present to a moderate degree in four. The method of administration varied with the individual case. Some of the observations noted were that (1) less nursing care was required; (2) only one patient developed a toxic rash that also appeared on the baby; (3) bladder distention to the point where catheterization was required was seen; (4) no harmful effects on the babies were noticed, and (5) labor apparently is prolonged by using phenobarbital, the average length of labor in his thirty-five primiparous patients being approximately thirteen hours and thirty minutes. When sedation did not take place within forty-five minutes to an hour after the initial dose, further medication was given. The size of the second dose depended on the progress of labor, the amount of restlessness, the severity of the pains, and the general condition of the patient. The same principles were followed in cases of prolonged labor in which more medication than usual was necessary. Usually, in these cases, a third and fourth dose had to be administered to obtain the desired results.

New York State Journal of Medicine, New York

32: 1341-1404 (Dec. 1) 1932

End-Results in Hyperthyroidism. F. H. Lahey, Boston.—p. 1341.
Epidemiology of Septic Sore Throat. P. B. Brooks, Albany.—p. 1348.
Report of Septic Sore Throat Outbreak in Greenwich, Washington County, N. Y. W. L. Munson, Granville.—p. 1351.
Dog's Gift to Relief of Suffering. W. B. Cannon and C. K. Drinker, Boston.—p. 1354.
Objectives of Bronx County Medical Society. W. Klein, New York.—p. 1358.
Therapeutic Massage. K. G. Hansson, New York.—p. 1359.
Poliomyelitis: Plan for Study and After-Care of 1931 Brooklyn Epidemic. M. B. Gordon, Brooklyn.—p. 1362.
Clamp Tourniquet. H. Cohen, New York.—p. 1367.
Rubella. J. R. Graham, New York.—p. 1368.
Alopecia Associated with Hypothyroidism in Child. I. N. Kugelmass, New York.—p. 1371.

Oklahoma State Medical Assn. Journal, Muskogee

25: 495-534 (Dec.) 1932

Acute Perforating Ulcers of Stomach and Duodenum. R. Fisher, Frederick.—p. 495.
The Gallbladder. W. E. Sistrunk, Dallas, Texas.—p. 499.
Eclampsia: Discussion of Its Medical and Surgical Treatment. G. R. Osborn, Tulsa.—p. 506.
The Physician, Leader in Mental Hygiene. J. J. Gable and J. L. Day, Norman.—p. 513.
Chronic Nonvalvular Heart Disease. W. Langston, Oklahoma City.—p. 515.

Public Health Reports, Washington, D. C.

47: 2297-2323 (Dec. 16) 1932

Sickness Among Male Industrial Employees During the Third Quarter of 1932. D. K. Brundage.—p. 2297.

Texas State Journal of Medicine, Fort Worth

28: 583-656 (Jan.) 1933

*Drugs in Treatment of Chronic Heart Disorders. G. W. Parson, Texarkana.—p. 590.
*Comparative Study of Gastric Analysis in Duodenal Ulcer and Gastric Malignancy. H. B. Williford, Beaumont.—p. 594.
*Necessity for Early Surgical Intervention in Acute Intestinal Obstruction: Survey of Forty-Eight Cases. L. W. Pollok, Temple.—p. 597.
Osteochondritis of Symphysis Pubis Following Prostatectomy. F. L. Barnes, Houston.—p. 601.
Perforated Peptic Ulcer: Report of Few Cases. R. L. Ramey, El Paso.—p. 604.
Indications for Cesarean Section. J. E. Kanatser, Wichita Falls.—p. 607.
Instrumental Treatment of Prostatism. R. E. van Duzen, Dallas.—p. 611.
Massive Emphysema Following Tracheal Injury: Case. A. J. Streit, Amarillo.—p. 615.
Renal Tumors. R. T. Wilson, Temple.—p. 617.
Mastoiditis with Intracranial Symptoms: Case. E. F. Stroud, Corpus Christi.—p. 622.
Roentgen-Ray Findings in Heart Pathology. D. Spangler, Dallas.—p. 624.
Accuracy Methods in Cardiac Diagnosis. L. W. Kuser, Gainesville.—p. 629.
Health Activities in Lower Rio Grande Valley. W. E. Spivey, Brownsville.—p. 630.
Dilemma of Contract Practice. W. F. Starley, Galveston.—p. 633.

Heart Disease Therapy.—Parson states that the rational use of drugs in the treatment of heart disease is dependent on exact and comprehensive diagnosis. Before intelligent treatment can be applied it is necessary to determine the etiology, the pathologic lesion, the physiologic status and the functional capacity of the myocardium. Etiologically and pathologically, chronic organic heart diseases may be divided into the following five groups: hypertensive heart disease, arteriosclerotic heart disease, rheumatic heart disease, syphilitic heart disease, and a miscellaneous group composed of hyperthyroidism, obesity, emphysema, spinal deformity, and so on. When a given case of heart disease has been placed in one of these groups, one is in a position to apply more intelligent treatment than when the etiology and the pathologic lesion have not been determined. The etiology and the pathologic lesion determine the type of drug to use but they furnish no indication as to when the drug should be employed. The functional state of the myocardium is indicated by the presence or absence of the symptoms of heart failure under various conditions of rest and activity and by the presence or absence of any changes in the fundamental properties—irritability, rhythmicity, tonicity, conductivity and contractility, of the heart muscle. It is the functional state of the myocardium that determines when a drug should be administered. The mere presence of an ana-

tomic lesion does not call for the use of drugs. There are no drugs capable of affecting these morphologic changes. The drugs of most value in the treatment of heart disease are valuable chiefly because of their effect on the fundamental properties of heart muscle. The author concludes that digitalis is without effect on the etiologic agents or the anatomic lesions of heart disease. It is of therapeutic value because of its ability to modify certain properties of heart muscle. The value of quinidine in the treatment of heart disease has been demonstrated recently. Its beneficial effect, like that of digitalis, is dependent on its ability to influence certain properties of heart muscle. Irritability, conductivity and stimulus production are depressed and the refractory period is prolonged. The usefulness of xanthin and its derivatives is dependent on their dilating effect on the coronary arterioles and on their diuretic action. It has been shown that they are capable of increasing the coronary blood flow, in some instances as much as 90 per cent. Antisyphilitic drugs in general are applicable in the treatment of syphilitic heart disease. Diuretics have a definite place in the treatment of heart disease. Theophylline and allied drugs are frequently helpful. Amyl nitrite and glyceryl trinitrate afford prompt and complete relief in the individual attack of angina pectoris. Barium chloride is of value in the treatment of Adams-Stokes seizures occurring in complete heart block.

Gastric Analysis Studies. — According to Williford, all obtainable information relative to the particular case must be taken into consideration in order to evaluate the normality or pathologic variation of the gastric hydrochloric acid. Free acid is more often high in ulcer and low in carcinoma. The combined acid is more often low in ulcer and high in carcinoma. Lactic acid of the gastric content, excluding the sarcolactic acid of ingested meats, is fermentative in origin and its presence depends on a low acid or achlorhydria with gastric stasis or obstruction and the presence of the lactic acid forming bacterial flora. Blood is more often found in the gastric content in cases of gastric carcinoma. Mucus and bile have been found more frequently in association with gastric carcinoma. An intelligent interpretation of the gastric analysis will often materially assist in the differential diagnosis of gastric carcinoma and duodenal ulcer.

Intestinal Obstruction. — Pollok believes that the most important factor in the high mortality rate of acute intestinal obstruction is still, as it always has been, delayed operation. Early recognition of the symptoms and immediate operation will do much toward reducing mortality. The usual textbook descriptions apply only to the moribund patients. With such a patient, surgical intervention is too late. The most practical treatment for mechanical ileus is surgical intervention at the earliest possible moment. The preoperative administration of physiologic solution of sodium chloride and hypertonic solution of dextrose injected intravenously is an effective and indispensable supportive treatment and will frequently convert the bad surgical risk into a comparatively safe one. Routine postoperative administration is essential, also, to combat shock and to relieve dehydration and toxemia. Utmost gentleness and a minimum of handling in the operative procedure is required to prevent trauma and reduce mortality. In acute intestinal obstruction, spinal anesthesia is the anesthesia *par excellence*. It affords perfect abdominal relaxation, facilitating the ease and rapidity of relieving the obstruction. The author reports a series of forty-eight cases of acute intestinal obstruction which came to operation. In twenty-nine of these the obstruction was evidently contingent on previous operation for various abdominal troubles. There were fourteen deaths, a mortality of 29.2 per cent.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

40: 641-698 (Dec.) 1932

Results of Operative Procedure on Stomach and Duodenum for Cure of Gastric and Duodenal Ulcer. L. P. Bell, Sacramento, Calif.—p. 641.
Recurrent Peptic Ulcer. V. C. Hunt, Los Angeles.—p. 648.
Intestinal Anastomosis Using Simplified Basting Stitch Method. D. V. Trueblood, Seattle.—p. 654.
Ulcer of Jejunum Following Gastro-Enterostomy: Case Treated by Conservative Operation. G. W. Nagel, San Francisco.—p. 659.
Case of Severe Gas Bacillus Infection with Good Clinical Result. D. H. Bessesen and B. A. Gjngold, Minneapolis.—p. 662.
Disturbed Protein Metabolism as Cause of Colloid Goiter in Dogs. J. S. Davis, Jr., J. W. Hinton and J. A. Killian, New York.—p. 665.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

45: 1-48 (Jan.) 1933

Hospital and Vineyard Medicine. W. Dubreuilh.—p. 1.
Results of Intradermal Tests in Certain Dermatoses and Therapeutic Effect of Intradermal Vaccines. H. W. Barber and L. Forman.—p. 4.
Persistent Hypersensitivity to Light After Intravenous Injections of Trypaflavine. H. Haxthausen.—p. 16.
Circumscribed Myxedema Associated with Hyperthyroidism. J. T. Ingram.—p. 19.

British Medical Journal, London

2: 1177-1222 (Dec. 31) 1932

*Significance of Electrocardiograms of Low Voltage Variety. M. A. Cassidy and H. B. Russell.—p. 1177.
Effect of Certain Physical Factors on Mental Capacity of School Children: Preliminary Report. J. Riddell.—p. 1180.
*Further Report on Tuberculin Treatment of Asthma. J. Maxwell.—p. 1182.
Temporary Visual Disturbance as Initial Symptom of Diabetes Mellitus. H. P. Himsworth.—p. 1184.
General Practitioner's Approach to Nervous or Mental Patients. C. M. Campbell.—p. 1186.
Some Points in Connection with Spinal Analgesia. E. F. Hill.—p. 1189.

Electrocardiograms of Low Voltage Variety.—Cassidy and Russell took electrocardiograms of 700 patients in an attempt to determine whether a low voltage curve has any clinical significance, and whether this significance (if existing) varies in any way according to the lead in which it occurs. They divided the 700 cases into three groups in which (1) the cardiovascular system, after full examination, had been passed as normal; (2) the electrocardiogram was normal in all other respects, although the heart was affected, and (3) the heart was affected, the electrocardiogram being abnormal in other respects. They observed that low voltage curves occurring only in lead I are found as commonly in electrocardiograms of normal hearts as of abnormal ones. It is obvious, therefore, that no especial significance can be placed on its occurrence alone. When, however, the electrocardiogram is abnormal in other respects its presence may have some slight significance, as it is a fact that a large percentage of such cases showed evidence of fairly gross muscle damage. With low voltage changes occurring in lead II, the authors state that: 1. Their first two groups, consisting of 251 cases, showed only one case coming into this category. Its presence, therefore, in an otherwise normal electrocardiogram would be unusual and possibly suggestive of muscle damage. 2. It occurs frequently in tracings showing left axis deviation. Here it cannot be considered either abnormal or having any special significance. 3. Associated with changes in the electrocardiogram other than left axis deviation, it must be considered to be abnormal and strongly to suggest myocardial damage. Low voltage curves occurring only in lead III were commonly found and cannot be regarded as having any especial significance. Low voltage changes occurring in all three leads were found in 1.75 per cent of the total electrocardiograms examined. In cases showing evidence of cardiovascular degeneration, the occurrence of such a tracing is significant and justifies a bad prognosis. Exceptions do occur, but the majority of these patients die in a comparatively short time. They conclude that it should be noted that low voltage curves (only in lead II or in all three leads) are particularly liable to occur in cases of cardiovascular degeneration, and their presence usually indicates a poor prognosis. The significance of such curves is of no great importance unless considered in conjunction with the other factors of the patient's case; if this is done, their occurrence may prove of great value in giving an accurate prognosis.

Tuberculin Treatment of Asthma.—Maxwell reports the results of a series of thirty-six cases of asthma that he treated by tuberculin in 1930 and records the present state of the patients. The present results are less encouraging than those previously reported, as there has been a tendency to relapse. He includes the cases that he treated, subsequently, up to and including 1931, bringing the total to 103. The method yields results which, although less promising than they appeared to be at first, are still sufficiently good to warrant a trial of tuberculin in all apparently suitable cases. The material that he used in all cases has been Koch's old tuberculin, which may be conveniently kept in decimal dilutions from 1:1,000 to

1:1,000,000. It is not necessary for the dilutions to be prepared immediately before use, as they keep well under ordinary conditions for at least a month. The initial dose is gaged by the response of the patient to the Mantoux test. One-tenth cubic centimeter of the 1:1,000 dilution is injected intradermally and the result is read after two or three days, attention being paid only to the area of swelling, for erythema is apparently of no significance. If there is no swelling, it is safe to begin the treatment with a subcutaneous injection of 0.1 cc. of the 1:1,000 dilution; if there is an area of swelling less than 1 cm. in its long axis, the initial dose should be 0.1 cc. of 1:10,000; if the area is between 1 and 2 cm. in its long axis, the initial dose should be 0.1 cc. of 1:100,000; and in cases in which the area of swelling exceeds 2 cm. in diameter the initial dose should not be greater than 0.1 cc. of the 1:1,000,000 dilution. In the early stages of treatment the interval between the injections should be two or three days. The interval between injections may be gradually increased, but weekly injections should be given for at least six months, after which, in the majority of cases, the treatment may be given fortnightly for a further period of six months. The injections may then be suspended for three months, but a further course of weekly and fortnightly injections should be given to bring the total period of treatment up to a minimum of two years.

Journal of Laryngology and Otology, Edinburgh

48: 1-76 (Jan.) 1933

Tonsil Problem. O. Kahler.—p. 2.

Lancet, London

2: 1417-1464 (Dec. 31) 1932

Biochemistry and Mental Disorder. J. H. Quastel.—p. 1417.
Radiographic Appearances of Lungs in Chronic Bronchitis and in Emphysema. J. V Sparks and F G. Wood.—p. 1419.
*Splenectomy and Thrombosis. A. G. Bryce.—p. 1423.
Pernicious Anemia, Following Gastrectomy and Splenectomy. C. C. Ungley.—p. 1426.
*Problem of Fluid Intake in Cardiac Edema. I. Harris and R. Mennie. —p. 1427.
*Surgical Emergencies Due to Meckel's Diverticulum, Illustrated by Six Cases. G. A. B. Walters and E. G. Wilkins.—p. 1430.
Anesthesia for Acute Intestinal Obstruction in General Practice. J. A. Robson.—p. 1432.
Thallium Poisoning: Two Cases. P. Ghalioungui.—p. 1433.
Gastrostomy for Carcinoma of Esophagus. H. Donovan.—p. 1434.

Splenectomy and Thrombosis.—Bryce states that the clinical and pathologic features of Banti's disease may be reproduced by several other diseases, and in particular by thrombophlebitis of the portal and splenic veins. There thus exists a condition, the clinical manifestations of which indicate splenectomy, in which thrombosis of the splenic vein exists before that operation is undertaken. Fatal thrombosis of the splenic and portal veins is a well recognized complication after splenectomy in Banti's and similar diseases. It is more likely to occur in patients with a normal or nearly normal platelet count, while a low count is held to point to a favorable outcome of the operation (Rosenthal). The author reports two cases: in the one with a low platelet count, fatal thrombosis ensued nine days after splenectomy. In the other, not such a clear-cut case of splenic anemia, the operation was safely surmounted in spite of an approximately normal thrombocyte count and the previous occurrence of systemic thromboses. Few observations can be found in the literature on the platelet content of the blood in splenic thrombophlebitis, and no figures are available to show whether or not in this condition the danger of postoperative thrombosis is increased. The author suggests that, in predisposed cases, postoperative thrombosis of the splenic vein may be rendered less likely if surgical intervention is limited to ligature of the splenic artery.

Fluid Intake in Cardiac Edema.—To determine the effect of excessive salt and fluid intake in patients with cardiac edema, Harris and Mennie put twenty-six patients on a standard diet for one week. The second week, a salt free diet and large quantities of fluid were given. In the third week, the same large quantities of fluid were given and 30 Gm. of salt daily. Some of the patients were put on a limited fluid intake (18 ounces daily) and a diet containing the ordinary amount of salt; later on, on a limited fluid and salt free diet. In others, a comparison was made between imbibition of large and small quantities of fluid, the patient remaining all the time under a salt free diet. In some cases the patient's condition did not warrant the continuous administration of large quantities of salt and water or the patient refused to continue with the treatment. The following measurements were made: osmotic pressure of the serum, osmotic pressure of the colloids, hemoglobin and refractometer determinations, blood viscosity, alkali reserve and venous pressure. The osmotic pressure of the serum was determined by the Beckmann instrument. For the purpose of determining blood protein, the Abbé refractometer was used. The hemoglobin determination was made by means of the Klett colorimeter. For the renal efficiency tests, the authors found the dilution and concentration test in conjunction with osmotic pressure determinations the most reliable. The venous pressure was determined by means of a needle in the basilic vein which was connected to a water manometer. Hess's instrument was used for the determination of viscosity, and van Slyke's apparatus for the determination of alkali reserve. From their study the authors conclude that salt and water influence cardiac edema adversely and, if given in sufficiently large quantities, cause hydremia. The administration of large quantities of fluid without salt does not affect cardiac edema adversely but causes an increased concentration of the blood. An important factor in cardiac edema is an impaired renal secretion for salt. Factors connected with maintaining normal osmotic pressure are, in part at least, responsible for the causation of cardiac edema.

Surgical Emergencies Due to Meckel's Diverticulum.—Walters and Wilkins report six cases of acute abdominal catastrophes caused by Meckel's diverticulum. All these cases occurred in males, five being between the ages of 15 and 27. Complications usually arise in children or young adults, and the sixth patient, aged 63, should be regarded as exceptional. In no instance could any history be elicited of previous symptoms that could be attributed to this condition. Acute intestinal obstruction was present in five of the six cases; in three of these the diverticulum was prolonged into a cord, which was attached to the mesentery and had ensnared the bowel. In one, the tip of the diverticulum had actually pierced the mesentery and was unable to retract owing to engorgement and swelling. It is difficult to visualize how this condition arose. In the patient aged 63, the obstruction was due to kinking of the ileum. In one case the diverticulum showed no obstruction of its lumen and no gangrene, yet perforation had occurred. The clear-cut edges resembled those of a perforated peptic ulcer, and it is probable that this was an example of misplaced gastric epithelium or gastric heterotopia. Cases of ulceration in Meckel's diverticulum terminating in perforation have been reported, a prominent symptom being repeated intestinal hemorrhage. More recently, Edwards has drawn attention to the clinical significance of heterotopia. The intestinal hemorrhage in the authors' case led to a mistaken diagnosis of intussusception. Unfortunately, the diverticulum was not examined microscopically. The high mortality associated with this condition is largely due to delay in operating, caused by errors in diagnosis. In their series there were two deaths. These cases were admitted about sixty hours and forty-eight hours, respectively, after the attacks began.

Medical Journal of Australia, Sydney

2: 795-818 (Dec. 31) 1932

Medical Curriculum of the University of Sydney. C. G. Lambie and H. R. Dew.—p. 795.
Specificity of Urinary Proteose. R. S. Steel.—p. 800.
Early Treatment of Congenital Talipes. N. D. Royle.—p. 803.
Meningismus. J. M. Gill.—p. 805.

Quart. Bull., Health Org., League of Nations, Geneva

1: 315-485 (Sept.) 1932

Medical Education in France. G. Roussy.—p. 315.

Journal of Oriental Medicine, South Manchuria

17: 45-64 (Nov.) 1932

Therapy of Primary Syphilis, as Well as Other Stages of Syphilis, by Inoculation with Rat-Bite Fever. T. Iwakiri.—p. 45.
Multiple Sclerosis of Endocrine Glands: Case. U. Takei.—p. 57.
Antigenetic Properties of Lipoids of Tubercle Bacilli: II. Specificity of Tubercle Bacilli. M. Yato.—p. 58.
Notes on Dysenteric Venenation and Serum Albumin. N. Hoshi.—p. 59.
Influence of Radium on Tuberculous, Carcinomatous and Simple Erosions of Portio Vaginalis Uteri: III. Simple Erosion. M. Sasaki.—p. 60.
Saccharomyces-Like Bodies in Human Lymph Nodes. E. Kitabatake. —p 62.
Scarlet Fever Prophylaxis. S. Nishibori.—p. 64.

Paris Médical

1: 125-140 (March 11) 1933

First Lesson in Surgical Clinic. R. Grégoire.—p. 125.
*Allergy and Immunity in Tuberculosis. J. Albert-Weil.—p. 134.
Hematopoietic Action of Concentrated Gastric Juice: Rôle of Stomach in Pernicious Anemia. C. Dreyfus.—p. 138.

Allergy and Immunity in Tuberculosis. — Albert-Weil states that tuberculous allergy is essentially different from true immunity. In man there is no real antituberculous immunity, but there may be a resistance to tuberculous infection, that is, a relative restriction of the propagation of tubercle bacilli in the organism resulting from the reticulo-endothelial and serologic reactions to the infection. This resistance cannot be produced unless the person in question harbors some living bacilli which sensitize him and render him capable of exhibiting allergic reactions. The presence of living tubercle bacilli in the organism causes the formation of antibodies capable of reacting with antigens. This explains the great advantage of vaccination with B C G and also its drawbacks, fortunately palliated by the fact that the bacilli are avirulent and their protein fractions less harmful. The presence of some living bacilli in the bodies of resistant persons and consequent formation of histopathologic lesions, no matter how small, explains why the cutaneous reactions to tuberculin are always positive in these persons. However, the violent allergic phenomena, the recrudescences, and so on, are not produced in the resistant, clinically healthy persons. In these the bacilli of reinfection, if they are not too numerous, do not propagate, or do so only slightly, because of an unfavorable serologic condition, and are immediately immobilized by the reticulo-endothelial elements as long as the individual preserves his equilibrium of resistance. It is the violent allergic reactions with fever, produced by the propagation of the tubercle bacilli and the intense bacillocellular destruction and disintegration, that most frequently cause the death of persons with progressive tuberculosis.

Presse Médicale, Paris

41: 233-248 (Feb. 11) 1933

Results of Surgical Treatment of Raynaud's Disease. R. Leriche and R. Fontaine.—p. 233.
*Contagiousness of Postoperative Phlebitis. J. Ducuing.—p. 236.
Tuberculosis and Mental Disturbances. R. Targowla.—p. 238.

Contagiousness of Postoperative Phlebitis. — Ducuing observed several facts which favor the contagiousness of postoperative phlebitis. They are: the epidemic character of the appearance of phlebitis, the coincidence of phlebitis with other infections, the appearance of phlebitis after operations rarely followed by venous complications during an epidemic of phlebitis, and the common characters of certain phlebitides during the course of an epidemic. The author thinks that while certain forms of phlebitis are due to infection, this factor is less evident in thromboses in which the clot is not adherent to the venous wall and which are grave chiefly because of the massive emboli which they cause. The author thinks the infection is exogenous and is transmitted from one patient to another by the surgeon or nurse. He has started to isolate his patients and when a small epidemic of phlebitis is noted the total number of operations is reduced for a few days, not only those frequently followed by phlebitis but also those in which it is rare.

Policlinico, Rome

40: 69-148 (Feb. 1) 1933. Medical Section

Hepatosplenomegaly with Jaundice. G. Melli.—p. 69.
*Biochemical and Experimental Research in Rapid Cholecystography of Antonucci and Modification of Method. E. Liverani.—p. 128.
Curability of Ascites in Patients with Cirrhosis. M. Tripodi.—p. 141.

Rapid Cholecystography of Antonucci and Modification of Method.—Liverani reviews the literature and describes the Antonucci test for rapid cholecystography. The test can be made in either of the following ways: 1. After a three or four day diet poor in carbohydrates, the patient is given an intravenous injection of 125 cc. of a 40 per cent solution of dextrose containing from 2 to 3 Gm. of dissolved tetraiodophenolphthalein. Roentgen examination is made from a half to one hour after the injection and a maximum opacity is found after two hours. 2. After fasting the night and morning preceding the examination, the patient is given an intravenous injection of 125 cc. of a 40 per cent dextrose solution with 25 units of insulin and from 2 to 3 Gm. of tetraiodophenolphthalein. The author found that this method always results in distention of the gallbladder. He states that the rapid elimination of tetraiodophenolphthalein results from a hyperactivity of the hepatic cells and that this technic lessens the possibility of toxic effects from the iodine compound. He maintains, however, that intravenous injection of both tetraiodophenolphthalein and dextrose may bring on complications of phlebitis and collapse. Thus, in order to render the method less harmful, he advocates a separate oral administration of from 80 to 100 Gm. of dextrose dissolved in a little water, forty-five minutes before the injection of tetraiodophenolphthalein. The patient is given three egg yolks at 5 a. m. to cause a thorough voiding of the gallbladder. At 8 o'clock he is given the dextrose and, at 8:45, 3 Gm. of tetraiodophenolphthalein dissolved in from 30 to 40 cc. of twice distilled and sterilized water. The author found in his experiments on men and rabbits that the hyperglycemic curve determined by the combined dextrose-tetraiodophenolphthalein method is longer than that derived from the separate ingestion of dextrose. The glycemic curve shows no initial temporary drop, as found by Antonucci and others, when the modified technic is administered. The author states that according to both methods roentgenologic opacity of the gallbladder and its maximum filling begin when the glycemic curve is in the ascending phase or at its acme.

Archiv für Gynäkologie, Berlin

152: 173-446 (Jan. 24) 1933. Partial Index

*Roentgenology in Obstetrics. F. A. Wahl.—p. 173.
*Clinical Observations and Study of Results of Abortions Performed for Social Indications. M. Karlin.—p. 202.
Weight and Fluid Intake of the New-Born in First Ten Days. C. Kaufmann and L. Bickel.—p. 210.
Cause and Treatment of Umbilical Hernia. B. Bergglas.—p. 214.
Radical Operation for Cancer of Vulva. A. Mandelstamm.—p. 260.
Development of Endometriosis. K. Heim.—p. 269.
*Significance of Aschheim-Zondek Test After Expulsion of Hydatid Mole. W. Rosenstein.—p. 320.

Roentgenology in Obstetrics—According to Wahl, a roentgenologic examination is indicated in cases in which ordinary clinical examination fails to give the desired information. The diagnostically obscure cases are readily interpreted by means of a roentgenogram. The location and position of the fetus, the question of whether there is more than one child, the position of the head and the relation of the size of the fetus to the size of the pelvis are clearly disclosed. No other method can demonstrate with greater precision the deformity or death of the fetus. The importance of the method in forensic cases is obvious. Roentgen examination should never be omitted in order to make sure that the fetus is viable before a cesarean section is performed. While a single plate will not furnish sufficient information, the author warns against serial plates for fear of damage to the fetus.

Abortions Performed for Social Indications.—Karlin reports on two series of abortions performed for social indications in Leningrad. The first series, performed during the first six months of 1931, includes 4,614 cases. The second series includes 7,167 cases performed in several clinics during February, 1931. In the first series considerable hemorrhage during the operation was noted in 4.33 per cent of the patients, and curettage was repeated in 0.97 per cent. There were three instances of rupture of the cervix and three instances of uterine perforation. There was no mortality. Complications of the genital organs were reported in only 4 of 365 cases followed up. In the second series, curettage had to be repeated in fifty-six patients, rise of temperature was recorded in fifty-eight, and inflammatory conditions of the genitalia were recorded in twenty-eight. There were eight cases of perforation of the uterus, with recovery, and there were two fatalities from fulminating infection. Economic want was given as the reason in 41 per cent. Among other reasons were listed a desire for economic independence, the desire to participate in the political and social life, educational demands, and greater refinement, with consequent aversion to domesticity. The author emphasizes the opinion expressed in earlier work that even extensive surgical experience cannot insure a safe outcome, as evidenced by the two fatalities in the second group.

Aschheim-Zondek Test After Expulsion of Hydatid Mole.—Rosenstein calls attention to the fact that Aschheim has definitely demonstrated that patients with a hydatid mole

or with a chorio-epithelioma secrete abnormally high amounts of hormone of the anterior lobe of the pituitary gland. That the hormone content of the urine is much higher in these degenerative forms of pregnancy than in normal pregnancy has been demonstrated by quantitative tests. For practical purposes the qualitative test is sufficient. It consists of luteinization and hemorrhagic spots on the ovaries of injected mice. On the basis of his own case and the experience of various observers, the author concludes that a positive test after expulsion of a hydatid mole and in the absence of a new pregnancy establishes the diagnosis of a chorio-epithelioma. He has not been able to find an exception to this rule in the literature. He believes that the negative phase in his case, indicated by a single negative test after expulsion of the mole, is to be charged up to the possibility of an occasional error inherent in every biologic test. A negative test after expulsion of a mole definitely rules out chorio-epithelioma. The author suggests, in view of the greater reliability of the test as compared with that of a histologic examination of uterine scrapings, that the order of procedure be reversed and urine examination for the pituitary hormone be given precedence over diagnostic curettage. The latter may be a factor in early dissemination of metastases and will give no information in the case of an ectopic chorio-epithelioma. The test should be made in the case of a hydatid mole every two weeks until it is negative. Thereafter the test may be repeated every four weeks for the next three months, at the end of which period the patient may be pronounced normal if the test has remained negative. A positive test four weeks after an operation for chorio-epithelioma indicates the recurrence of a malignant condition with greatest probability.

Deutsche medizinische Wochenschrift, Leipzig

59: 199-240 (Feb. 10) 1933

Blood Group and Blood Transfusion. F. Schiff.—p. 199.
Practical Significance of Research on Blood Groups. Müller-Hess.—p. 201.
Blood Donor Organizations. E. Unger.—p. 204.
Problem of So-Called Traumatic Encephalopathies. F. Kehrer.—p. 206.
*Results of Desensitizing Hay Fever Treatment by Means of Mixed Pollen Extracts. K. Hansen.—p. 208.
Anatomic Investigations on Hernia of Hiatus Oesophageus. S. Koeppen and P. Frank.—p. 211.
*Menstrual Changes in Intestinal Motility. G. Halter and R. Pape.—p. 212.
Spleen and Fat Metabolism. S. Leites, A. Koslowa and W. Jussin.—p. 214.

Desensitization by Mixed Pollen Extracts.—Desensitization by means of a polyvalent pollen extract is, according to Hansen, the method of choice in the treatment of hay fever, and particularly in bronchial asthma caused by pollen antigens. The author made his observations during 1932 on 316 patients, who were subjected to desensitization with polyvalent pollen extract; 28 per cent were entirely free from symptoms, 42 per cent showed great improvement, 20 per cent were slightly improved, and 10 per cent were not improved. The author emphasizes that the treatment is a prophylactic one and therefore should begin before the period of propagation of the pathogenic pollen antigens; that is, it should be largely completed at the beginning of the blooming period of the grasses. In order to accomplish this, the treatment should be commenced between February and April. In patients who remain uninfluenced by the treatment with polyvalent pollen extracts, the influence of unusual pollen antigens should be studied, and a desensitization against these should be instituted during the following year.

Menstrual Changes in Intestinal Motility.—Halter and Pape investigated the influence of menstruation on the motility of the intestine by anamnestic inquiries on a large material and by roentgenologic studies on fifteen cases. Of the 481 women in whom the intestinal function was regular, only 1.2 per cent reported constipation at the time of menstruation, and 9.1 per cent stated that they noted a tendency to diarrhea. But, whereas the percentage of menstrual changes in intestinal motility was small among the women with normal intestinal function, 20 per cent of the women with habitual constipation reported that evacuation of the bowels became normal during the menstrual period. The roentgenologic tests not only confirmed the self observations of the women but revealed a menstrual increase in intestinal motility in more than half of the examined cases (eight of fifteen). The fact that the increase in motility usually becomes manifest in a normalization of the intestinal function in patients with habitual constipation seems to indicate that the facilitation of the correlation of the various processes in the intestinal motility is the essential factor, for it is this correlation that is disturbed during the habitual constipation. This reflex connection is promoted by the menstrual increase in the sensitivity of the entire autonomic nervous system. If, during the intermenstrual period, the threshold of stimulation decreases again, the various pathologic forms of the intestinal activity return.

Deutsche Zeitschrift für Chirurgie, Berlin

238: 529-652 (Jan. 18) 1933

Roentgenoscopy of Central Nervous System with Thorium as Contrast Medium. O. Wustmann.—p. 529.
*Results with Gastro-Enterostomy as Emergency Operation in Ulcer. L. Zukschwerdt and T. Eck.—p. 568.
*Development of Spindle Cell Sarcoma on Basis of Paget's Osteitis Deformans. G. Gerstel and R. Janker.—p. 577.
Is Malgaigne's Pelvic Fracture a Compression Fracture? H. Walter.—p. 604.
Treatment and Evaluation of Fractures of Vertebrae. C. Schleipen.—p. 618.
Vertebral Changes After Traumatic Tetanus. L. Zukschwerdt and R. Axtmann.—p. 627.
Simultaneous Development of Osteochondritis in Six Joints. W. Müller.—p. 635.
New Treatment of Fibromas of Nasopharynx. J. Jáki.—p. 641.
Corrections After Operation for Harelip. E. Eitner.—p. 644.
Peculiarities in Topography of Innominate Artery in Relationship to Other Anomalies. A. Lurje.—p. 646.

Gastro-Enterostomy as Emergency Operation in Ulcer.—Zukschwerdt and Eck report the results of 192 gastro-enterostomies performed in Enderlen's clinic during the last twelve years, the indications for which were stenosis, perforation, bleeding, social indications and suspicion of malignant transformation. Bleeding constituted the most frequent indication in women. As compared with resection, the mortality of gastro-enterostomy was high. The best results were obtained in the patients operated on for bleeding or because of social conditions. A cure was obtained in 55.5 per cent. Only 21.6 per cent of those operated on for perforation were cured. This group showed the highest occurrence of peptic jejunal ulcer, 51.3 per cent. The best results were observed in patients between the fifth and seventh decade, and the poorest in the second decade. The results in women were better than in men. Gastro-enterostomies performed because a resection was technically impossible gave 28.5 per cent of cures.

Spindle Cell Sarcoma.—According to Gerstel and Janker, inaccuracies in description make it difficult to select from the literature the cases of sarcoma developing on the basis of Paget's osteitis deformans. They were able to collect thirty-nine undoubted cases and three doubtful cases. Their research established that the incidence of malignant transformation in osteitis deformans is not as rare as German literature would lead one to believe. The authors recommend, in addition to the surgical treatment, which is always more or less mutilating, roentgen irradiation of the lesion. They point out that their patient lived two and one-fourth years after treatment was begun, while the patients who were not treated or who were treated only surgically succumbed much earlier. The histologic studies of their case, besides verifying the clinical and roentgenologic diagnosis, demonstrated a peculiar relatively regular pattern of new bone formation not described heretofore in the literature.

Klinische Wochenschrift, Berlin

12: 169-208 (Feb. 4) 1933

Pregnancy Kidney. L. Lichtwitz.—p. 169.
*Regulatory Action on Circulation of Substance Present in Organism: Significance for Hypertension. F. Lange.—p. 173.
Chemistry of Substances in Regulation of Circulation. K. Felix.—p. 176.
Roentgen Kymography of Thoracic Organs. H. Cramer, A. Wilke and H. H. Weber.—p. 179.
*Value of Greppi-Villa Test (Contraction of Spleen Following Epinephrine Injection) for Diagnosis of Thrombophlebitic Spleen Tumors. F. Klages.—p. 182.
Pathology of Coagulation of Blood. H. Storz and H. Schlungbaum.—p. 184.
Rheumatic Diseases of Heart and Vessels, Papulonecrotic Tuberculids and Tuberculin Anergy. Marion B. Sulzberger and E. Feit.—p. 189.

Circulatory Substance in Hypertension.—Lange calls attention to a substance that is present in the body and that has a vasodilating and blood pressure reducing action. The

substance can be differentiated from other factors influencing the circulation by its pharmacologic and physiologic effect and is present in all human and animal organs. The reduction in blood pressure is accompanied by a greater minute volume and an increase in the circulating quantity of blood. The dilating effect becomes manifest primarily on the arterioles. The point of attack is the contractile cell, not the nerve. Under physiologic conditions the substance is regularly present in the blood and is eliminated unchanged in the urine. Its quantity present in the blood or in the urine is independent of the time of day and of alimentation. In patients with hypertension there exist considerable quantitative changes. In essential hypertension the blood pressure reducing substance is eliminated in much larger quantities, and in the blood the substance is present in smaller amounts than is the case in normal persons. The condition is reversed in hypertension of patients with renal disease, for in these the substance is increased in the blood but decreased in the urine. In the hypertension of aged persons the substance is present in normal amounts in the blood as well as in the urine. From these observations the author concludes that the various forms of hypertension differ in their pathogenesis.

Greppi-Villa Test in Diagnosis of Thrombophlebitic Spleen Tumors.—Klages calls attention to the test that Greppi and Villa recommended for the diagnosis of thrombophlebitic tumor of the spleen. These authors showed that in patients with circulatory disturbances of the splenic vessels (thrombosis, endophlebitis, periphlebitis, stenosis of the splenic veins) the subcutaneous injection of 1 mg. of epinephrine results in considerable contraction of the spleen, whereas in hyperplastic and in indurating spleens the contracting action of epinephrine is not sufficiently pronounced to become clinically manifest. The author has studied the practical value of this test in observations on patients and in experiments on dogs. In three patients he observed, in addition to a considerable contraction of the spleen, an increase in the formed elements of the blood, particularly in the leukocytes, which during this disorder usually have a low initial value. He reached the conclusion that this epinephrine test is not absolutely specific for thrombosis of the splenic veins, because the fluctuations in the size of the spleen are already considerable under physiologic conditions and during pharmacologic modifications. However, in combination with the clinical manifestations he considers it nevertheless a valuable diagnostic aid.

Medizinische Klinik, Berlin

29: 177-208 (Feb. 3) 1933

Results of Treatment of Laryngeal Carcinoma by Operation and by Prolonged Irradiation. V. Hinsberg and S. Epstein.—p. 177.
Atmospheric and Climatic Influences on Child's Organism: Curative Value. L. Moll.—p. 181.
Alimentary Galactosuria. Z. Brüll and P. Hegedüs.—p. 182.
Chlorine Gas Accident in Tilsit. W. David.—p. 184.
Roentgen Therapy in Acute Tonsillitis. E. N. von Oettingen.—p. 185.
Therapy and Pathogenesis of Sciatica. A. Löw.—p. 186.
*Severe Anemias During Pregnancy. R. Schumann.—p. 187.
*Barbituric Acid Allergy. K. Jontofsohn.—p. 189.
Etiology of Multiple Sclerosis. H. Ahringsmann.—p. 191.

Severe Anemias During Pregnancy.—Schumann discusses five cases of severe anemia that developed during pregnancy or during the puerperium. In four of them a connection with pregnancy could be proved at least as far as the time was concerned. But this, of course, does not prove that pregnancy is a causal factor. In four instances anamnesis revealed no former blood diseases, but two of these patients had some symptoms indicative of pernicious anemia, such as a megalocytotic blood forming type, achylia, glossitis, yellowish blood serum, and an increase of the biliary pigments in the urine. All these symptoms, with the exception of achylia and of a slight increase in the biliary pigments of the urine, disappeared in the course of the treatment. In one of these two women, who several years previously had exhibited a symptomatology of pernicious anemia, examination now during pregnancy revealed achylia and an increase of biliary pigments in the urine but no other signs of pernicious anemia. Another woman had, besides achylia, only the symptoms of severe secondary anemia, and the author thinks that this may be a case of achylic chlorosis. A fourth woman showed only the aspects of a secondary anemia. But these four cases had in common the fact that treatment with preparations of liver and gastric mucous membrane, combined with arsenical medication, was so effective that a complete cure was obtained. The fifth case differs from other four in that it was refractory to all treatment. The fact that fatigue and paleness had existed three years previous to this pregnancy is considered by the author an indication that anemia had been present at the time, although an anemic blood picture of that period was not available. Treatment improved the condition at that time but the second pregnancy caused an acute exacerbation, and the author concludes that pregnancy was not the causal factor of this anemia but that pregnancy and confinement had an unfavorable influence on an already existing anemia. This patient died. The author thinks that interruption of pregnancy for the purpose of removal of the assumed cause of the anemia is not advisable. He considers interruption too serious an intervention to be undertaken on the weak patients, the more so since the prognosis is doubtful. On the basis of the results obtained in four out of five women, he advises that the anemia be treated as such, he thinks this will make normal confinement possible.

Barbituric Acid Allergy.—Jontofsohn points out that cases of febrile, morbilliform or scarlatiniform exanthems following medication with barbituric acid preparations have been reported as far back as 1917. Since then the author has watched for such cases, and in the course of fifteen years he has observed several dozen in spite of the fact that barbituric acid preparations were given with particular precaution in the Berlin clinic with which he is connected. Scarlatiniform or morbilliform exanthems were noticed in all cases and these were frequently accompanied by enanthems, such as redness of the gums, of the tongue, particularly of the foliate papillae, and of the larynx. This condition deserves consideration not only because it is difficult to differentiate it from scarlet fever and from measles but also because in weakened patients it may become an extremely grave complication and eventually hasten their death. The author illustrates this with three case reports. For the differential diagnosis of barbituric acid allergy it is important that the efflorescences are usually a mixture of scarlatiniform and morbilliform type and that they itch occasionally. Moreover, the paleness of the chin triangle, characteristic in scarlet fever, is usually absent. The scarlet fever blanching phenomenon may also prove helpful in the differentiation.

Münchener medizinische Wochenschrift, Munich

80: 165-204 (Feb. 3) 1933

Mechanism of Stomach. O. Goetze.—p. 165.
Physiology and Pharmacology of Choline. K. Schübel.—p. 168.
*Interruption of Pregnancy by Roentgen Rays. H. Wintz.—p. 172.
Determination of Value of Valerian and Hops Combination. F. Luther.—p. 174.
*Positive Roentgen Signs of Lungs in Gastro-Intestinal Disorders with Especial Consideration of Gastroduodenal Ulcers. E. Koppenstein.—p. 175.
Postoperative Stimulation of Peristalsis and Treatment of Atony. P. Caffier.—p. 176.
How Can the General Practitioner Make the Home of His Patient Allergen Free? M. J. Gutmann.—p. 178.
Ascending Forms of Nephritis. R. Schoen.—p. 180.
Roentgenologic Diagnosis of Tumorous Bone Diseases. R. Kienböck.—p. 182.

Interruption of Pregnancy by Roentgen Rays.—Wintz discusses the various aspects of abortion produced by roentgen rays on the basis of his own observations and of those reported in the literature. He points out that the required dose is comparatively high. Because the ovaries also are influenced by the roentgen rays and because the amount of rays that attacks the ovaries is equal to the castration dose, it is inadvisable to employ roentgen abortion in young women. In older women roentgen abortion can be resorted to, but even in these cases it is not always the method of choice. Another shortcoming of roentgen abortion is that it involves the danger of defective offspring. In spite of these disadvantages, the author recommends roentgen castration for certain cases. However, in order to be successful, the treatment requires the cooperation of the family physician, the gynecologist and the radiologist. It should not be left to the patient to decide whether she wants roentgen abortion or curettage, but all factors should be carefully weighed and the best method determined and carried out.

Roentgenologic Aspects of Lungs in Gastro-Intestinal Disorders.—Roentgenoscopy of 2,000 patients with disorders of the gastro-intestinal tract revealed to Koppenstein that 17.5 per cent had calcified processes in the lungs. In an additional 7 per cent of the cases, roentgenoscopy revealed uncalcified processes of the pulmonary parenchyma, which had remained unnoticed until this examination. In some patients the processes were quite extensive, even caverns being present in some instances. The author also observed that patients with gastro-duodenal ulcer show parenchymatous changes of the lung just as frequently as do patients with other intestinal disorders.

Wiener klinische Wochenschrift, Vienna

46: 161-192 (Feb. 10) 1933

Treatment of Diffuse, Suppurative Leptomeningitis. O. Mayer.—p. 161.
*Bronchospastic Dyspnea in Patients with Heart Disease. N. Jagić.—p. 164.
Neuro-Energy Exchange in Patients with Asthma. N. Kabanow.—p. 165.
Complement Fixation Reaction in Clinic of Gonorrhea in Men. R. Chwalla.—p. 169.
Does Solution of Secondary Butylbrompropenylbarbituric Acid (Pernocton) Represent an Enrichment of Anesthetic Methods? A. Maurer.—p. 172.
*New Method for Functional Test of Circulatory System. M. Szour.—p. 174.
Urinary Disorders of Women. W. Latzko.—p. 176.
Psychology and Psychopathology in Criminal Procedure. H. Herschmann.—p. 177.
Prevention of Meat Poisoning. O. H. Henneberg.—p. 178.

Bronchospastic Dyspnea in Heart Disease.—Jagić shows that inflation of the lung may develop in various types of heart disease even if emphysema is absent. This increase in the volume of the lung is primarily caused by increased respiration during dyspnea. It is probable that bronchospastic factors are involved, which during the increased inspiration and insufficient expiration of dyspneic patients exacerbate the inflated condition and the deep position of the diaphragm. Moreover, the so-called pulmonary rigidity that occurs in heart disease and is thought to be the result of stasis (changes in pulmonary circulation) is partly caused by the changed ventilative condition, which in turn is the result of bronchospasm. The author observed that in various types of heart disease attacks of dyspnea develop, which correspond not to typical cardiac asthma but more to bronchial asthma. The cardiac disorders were primarily decompensated valvular lesions and decompensated cardiac disturbances in hypertension or in emphysema. These patients did not have nervous bronchial asthma previous to the decompensation, and secondary bronchospasm must be thought of. The author recommends epinephrine or a combination of epinephrine and pituitary gland for the diagnosis and treatment of these cases. The dyspnea, and particularly the difficulty and prolongation of the expiration, disappear shortly after the injection of these preparations.

New Functional Test of Circulatory System.—Because the commonly employed test methods for the functional capacity of the circulatory system have some shortcomings, Szour devised a new one, the technic of which is as follows: First the maximal and minimal blood pressure values are determined while the patient is in the horizontal position. Then the right or left arm is lifted vertically and the maximal and minimal pressures are again determined in the lifted arm. Then the patient is asked to bend the body ten times in succession, and the maximal and minimal pressures are again determined. The author reasons that in the vertically lifted extremity the peripheral arterial circulation is made much more difficult, which, depending on the functional capacity of the circulatory system, becomes manifest in changes in the maximal and minimal blood pressures, and especially in the amplitude. This test method was employed in a number of patients with and without circulatory disturbances. The second part of the test (after lifting of arm) reveals in patients with normal circulation that the maximal and minimal pressures decrease by 20 or 25 mm. of mercury, but the amplitude remains as a rule unchanged or increases slightly in comparison with the first part of the test. In patients with impaired circulation the decrease in the maximal and minimal pressures is less marked and the minimal pressure may even increase, but more important is the fact that the amplitude frequently decreases. In the third part of the test (after bending exercises) healthy persons show an increase in the maximal pressure and in the amplitude as compared to the values found in the second part of the test; in circulatory insufficiency, however, the maximal pressure remains unchanged or decreases, and the amplitude decreases in most instances.

Zeitschrift f. Geburtshülfe u. Gynäkologie, Stuttgart

104: 209-365 (Jan. 31) 1933

Metastases in Uterine Cancer. W. Reich.—p. 209.
Relation of Matrix to Carcinoma of Visible Portions of Female Genitalia. H. Hinselmann.—p. 228.
Surgical Diathermy in Treatment of Genital Carcinoma. G. Huwer.—p. 244.
*Question of Regulating Blood Calcium Level as Well as Its Composition Through Parathyroid Hormone. R. Spiegler and K. Stern.—p. 250.
Intraglobular Methemoglobinemia of Pregnancy Without Hemolysis. H. Dennhardt.—p. 275.
*Anterior Lobe Pituitary Hormone and Amenorrhea. P. Wirz.—p. 293.
Partial Absence of Skull (Meroacrania) with Podencephaly. O. Gragert.—p. 322.
Possibility of Prevention of Toxemia of Pregnancy and of Consequent Reduction of Stillbirths to 1 Per Cent. H. van der Hoeven.—p. 337.

Regulating Blood Calcium Through Parathyroid Hormone.—On the basis of animal experiments and their experience with a case of postoperative tetany complicated by herpetiform impetigo, Spiegler and Stern make the following deductions: 1. Parathyroid hormone is capable of raising the blood calcium level in man, though not to as high a level as in the lower animals. 2. The curve of the blood calcium rise reaches its highest point in from one to two hours after injection. 3. The effect apparently does not depend on the amount of hormone used. 4. The parathyroid hormone effect cannot be considered specific, because the same effect can be accomplished by other means, such as injection of prolan or epinephrine. 5. The changes in galvanic irritability did not parallel the blood calcium level. 6. An effect of regulating calcium metabolism in the sense of bringing it to normal combinations was noted in the pathologic case observed. 7. It was possible through the administration of parathyroid hormone to regulate the rhythm of calcium metabolism and to bring about a cure in a case of tetany following thyroidectomy. 8. The galvanic irritability does not depend on the particular combination in which calcium is present in the blood.

Anterior Lobe Pituitary Hormone and Amenorrhea.—Wirz, in his study of the relation of the anterior pituitary hormone to functional amenorrhea, quotes Zondek's statement that the pituitary gland secretes sex controlling hormones at all ages, and he investigates the status of these hormones in the course of amenorrhea. According to Zondek, prognosis in functional amenorrhea is poor if a five time concentration of urine reveals the presence of the follicle maturing hormone. Utilizing this functional method, the author examined the urine of women with a suspended ovarian cycle, of women with an irregular cycle, and of women who had ceased menstruating for some time. The author's experiments aimed at the solution of the following questions: 1. The fate of the anterior pituitary hormone before sexual maturity and the question of its being excreted in the urine. 2. The fate of the hormone during amenorrhea of lactation. 3. The fate of the sex controlling pituitary hormones in amenorrheas of ovarian origin at sexual maturity. The author found that the pituitary glands of fetuses, of the new-born and of children under 5 years contained the follicle ripening hormone A but not the luteinizing hormone B. The entire gland before the first year hardly contained a single mouse unit. Hormone A was excreted in small amounts in the urine of children. The author supposes that hormone B is not secreted until shortly before puberty. The increased secretion of hormone A together with the appearance of hormone B at the time of sexual maturation are responsible for the establishment of the ovarian cycle. He failed to find the sex hormones in the pituitary glands of parturient women shortly after delivery. After a full term pregnancy, hormone A appears in the urine from two to three weeks post partum, while hormone B appears from five to six weeks post partum, the latter fact coinciding with the onset of the first ovulation. This explains the frequent onset of menstruation six weeks post partum. The failure to menstruate in a lactating woman is accompanied by an increased excretion of the hormone in the urine. This type of amenorrhea is of ovarian origin, since the pituitary hormone is secreted at this period as well. With regard to

amenorrheas of ovarian origin in nongravid women, it was found that the prognosis was poor if the hormone was present in the amount of 110 mouse units for each liter of urine. In such cases, folliculin (ovarian hormone) could not be demonstrated. The question of whether the increase of hormone A in these cases is due to increased production in the pituitary or to the failure on the part of the ovary to utilize it has not been answered. The author agrees with Zondek that the presence of 110 mouse units in a liter of urine in cases of amenorrhea signifies a total suspension of ovarian function. It is obvious that administration of anterior lobe pituitary extracts in such cases is futile.

Zeitschrift für Krebsforschung, Berlin

38: 351-464 (Feb. 10) 1933. Partial Index

Influence of Diet on Growth of Transplanted Tumors. W. Caspari and F. Ottensooser.—p. 351.
*Cancer and Diet. A. H. Roffo.—p. 369.
Malignant Course of Giant Cell Tumor of Bone. W. I. Korchow.—p. 380.
Organotropy of Neoplasms. E. Fränkel.—p. 394.
*Vitamins and Cancer. L. von Gordon.—p. 398.
Carcinoma of Digestive Apparatus in Young Persons. G. Wolff.—p. 409.
*Occurrence of Atoxyl-Fast Lipase in Serum of Cancer Patients: Its Clinical Significance. F. Bernhard.—p. 450.
Diastase Inactivator in Malignant Tumors. F. P. Tinozzi.—p. 462.

Cancer and Diet.—Roffo describes his own tests and cites observations of others revealing the influence of diet on malignant tumors. Animal experiments, as well as the high incidence of cancer among peoples whose diet has a high cholesterol content, prove that the cholesterol content plays the main part. This influence of the diet, which is related to the increased absorptive capacity of the cancer cells, involves a greater absorption of the energetic elements than is required for normal cell growth, and the disorganized and neoplastic growth, characteristic of cancer, may be the result. The author thinks that these observations lead to a better understanding of the complicated problem of the pathogenesis of malignant tumors, and that they are important for the study of the prophylaxis and of the precancerous stage.

Vitamins and Cancer.—In discussing the etiology of cancer, von Gordon emphasizes that two factors have to be considered, the immediate cause and the primary cause. The vitamins may be an immediate cause or they may participate in the transformation of the cells. The author discusses and evaluates the observations of numerous investigators who have studied the relations between vitamins and cancer. He does not believe that the so-called growth vitamins are of greater importance in the pathogenesis of cancer than are other vitamins, for he thinks that all vitamins have an influence on growth, in addition to their specific action. He calls attention to Geréb's observations, which proved that a diet deficient in all vitamins retards tumor growth much more than one in which only certain vitamins are omitted. In view of the fact that cancer develops slowly and that it is frequently latent for several years, he considers it inadvisable to encourage the intake of large amounts of vitamins, particularly in older persons, who are more likely to develop cancer and have a capacity for storing vitamins.

Atoxyl-Fast Lipase in Serum of Cancer Patients.—Bernhard points out that the blood serum of patients with cancer frequently shows an increase in the atoxyl-resistant lipase and that this manifestation has a certain diagnostic value. The increase is caused by the carcinoma tissue, which contains considerable amounts of atoxyl-fast lipase and eliminates it into the blood. Following radical removal of a carcinoma, the lipase content of the serum becomes normal again. The value of lipase demonstration for the diagnosis of cancer is limited by two factors: (1) the increase in the lipase content is, after long existence of the tumors, followed by a decrease, in the course of which normal values are passed again; (2) increase in atoxyl-resistant lipase sets in as soon as numerous epithelial cells take on a young or embryonic character. Increase in the lipase content of the blood serum frequently becomes manifest in hypertrophy of the prostate and in chronic cystic mastitis, and it is noteworthy that in these conditions there is a high percentage of carcinomatous degeneration. It is highly probable that a carcinoma exists if an increase in the atoxyl-resistant lipase persists for a long period during chronic cystic mastitis. In the course of roentgen treatment of carcinoma, large amounts of lipase are often eliminated, but if the carcinoma tissue is completely destroyed the lipase content decreases to normal values. Consequently the determination of lipase is helpful in the estimation of the result of roentgen irradiation. The increased content of the serum in atoxyl-resistant lipase disappears following radical removal of a carcinoma. If this is not the case, or if an increase sets in again, there is danger of a relapse. In order to utilize these observations for the diagnosis of carcinoma, tests are now being made with the lipase that has been isolated from carcinomas. Its cleavage products in the blood may prove of greater value for cancer diagnosis than the demonstration of lipase alone.

Zentralblatt für Gynäkologie, Leipzig

57: 305-384 (Feb. 11) 1933

Rôle of Vegetative Nervous System in Pyelitis and Ileus of Pregnancy. M. Penkert.—p. 306.
*Pyelitis and Ileus of Pregnancy. H. Preiss.—p. 319.
Ureter in Pregnancy and in Puerperium. F. Friedl.—p. 327.
Hydronephrosis of Ureter Due to Compression by Parametrial Endometriosis. G. Haselhorst.—p. 337.
Irradiation of Kidney in Postoperative Ureteral Fistula. W. Weibel.—p. 343.
Endometriosis of Urinary Bladder: Case. H. von Sauer.—p. 347.
Lipoma of Prepuce in Small Girl. B. Cttow.—p. 351.
Experiences with Cystochrom (a Dye) in Determination of Functional Diagnosis of Kidneys. K. Dierks.—p. 352.

Pyelitis and Ileus of Pregnancy.—Preiss states that the literature of the past forty years contains 250 cases of mechanical obstruction of the intestine in pregnancy, and 34 cases of paralytic ileus. He emphasizes that in this last group only those cases were included in which a normal gravid uterus was apparently responsible for the ileus. All of the thirty-four cases included in this group were verified post mortem. They were characterized by the absence of a mechanical cause for obstruction. The uterus was neither displaced nor inflamed. The small intestine was found much distended above and collapsed below the innominate line (in the true pelvis). Nine of the cases were complicated by pyelitis. To these nine the author adds his own case, in which pyelitis and ileus coexisted. Laparotomy revealed the presence of a paralytic ileus. Conservative cesarean section was performed and the patient recovered. The following theories were advanced to explain the pregnancy ileus: (1) paralysis of the intestine as the result of toxemia caused by pyelitis; (2) reflex ileus as the result of ureteral dilatation; (3) retroperitoneal phlegmon caused by pyelitis and in its turn producing a reflex ileus; (4) toxemia of pregnancy resulting in atony of the ureters and of the intestine, the latter not being able to withstand the pressure of a gravid uterus. The treatment consists in laparotomy and interruption of pregnancy. The presence of pyelitis without ileus does not call for interruption of pregnancy.

Ugeskrift for Læger, Copenhagen

95: 131-158 (Feb. 2) 1933

*Infectious Mononucleosis with Especial Regard to Differential Diagnosis with Diphtheria. F. Wulff.—p. 131.
*Meralgia Paraesthetica. K. H. Krabbe and M. Ellermann.—p. 135.

Infectious Mononucleosis.—Wulff says that infectious mononucleosis occasionally more or less resembles diphtheria and is confused with diphtheria in its graver forms. The blood picture is a reliable aid in differential diagnosis. The examination of smear specimens of the blood is therefore imperative before treatment with diphtheria antitoxin should be considered.

Meralgia Paraesthetica.—Krabbe and Ellermann find meralgia paraesthetica more frequent than other sensitive neuritides in the lower extremities and say that the practitioner should understand the good prognosis of this disorder. As the fifteen cases they report, like those in the literature, show a variable etiology, treatment should if possible be directed to the cause. Beyond this treatment no particular therapy is indicated, and massage and electrical treatment are useless or even contraindicated. The troublesome symptoms of meralgia paraesthetica have a tendency to disappear after some time. Only in more stubborn cases can there be reason for considering the intervention that has been suggested, division of the sheath in fascia lata in which the lateral cutaneous femoral nerve passes for a short distance.